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TM 5-3002

WAR DEPARTMENT TECHNICAL MANUAL

U. S. Dept. of Army



DUMP BOTTOM

TRAILER, MODEL E-13

CRAWLER MOUNTED

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WAR DEPARTMENT • 7 DECEMBER 1942

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is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

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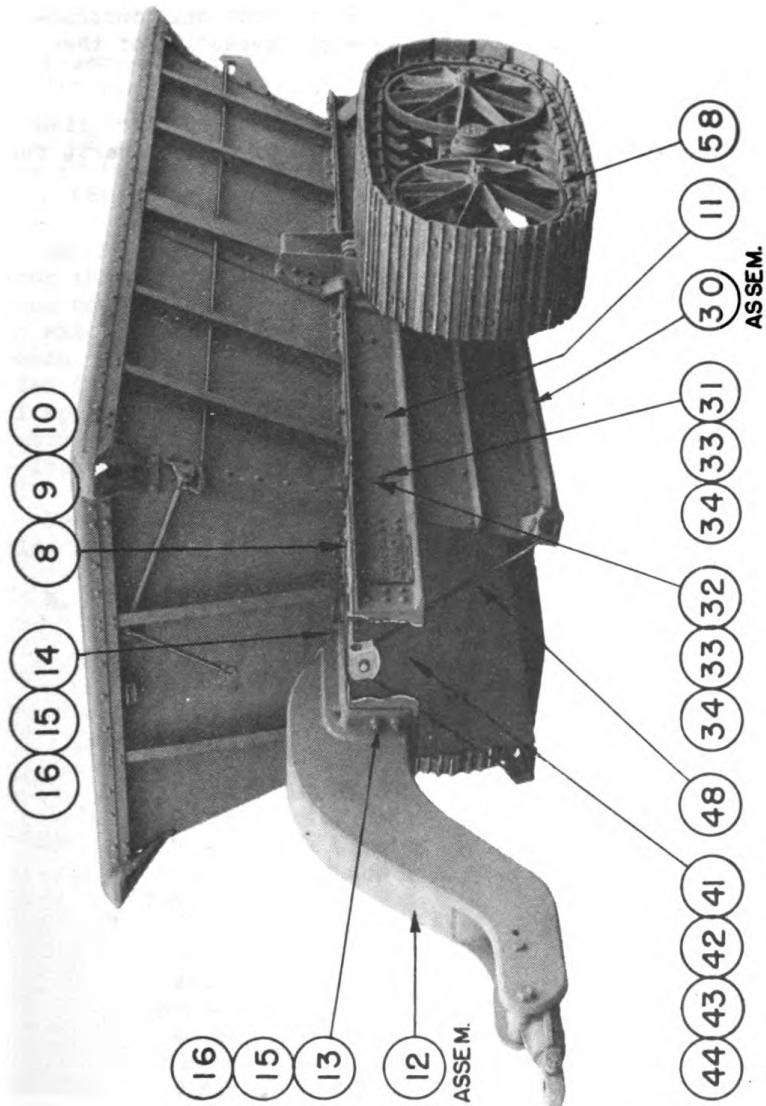
SECTION 1

1142



OPERATING INSTRUCTIONS

MS24550



<u>Ref. No.</u>	<u>Description</u>
42	Front Sheave Pin
44	Front Sheave Bracket
45	Frame Sheave Assembly
46	Sheave Pin
48	Plow Steel Wire Rope
53	Rear Handle
57	Hand Automatic Dump Mechanism
58	Forged-Trak Wheel Assembly

**E-13 BOTTOM DUMP TRAILER
(3/4 Front View)**

Fig. 2

Section I

INTRODUCTION

	Paragraph
Scope - - - - -	1
Data- - - - -	2

1. SCOPE. - This manual is published for the information and guidance of all personnel engaged in the operation, lubrication, inspection, maintenance, and repair of Model E-13 Athey Bottom Dump Trailers.

2. DATA. - Part I of this book covers operating instructions, instructions on lubrication, and instructions regarding general inspection of the Model E-13 Trailer during operation.

Part II covers instructions pertaining to the maintenance of assemblies and subassemblies, and necessary adjustments and settings of various parts that are essential for efficient trailer performance.

Section II

DESCRIPTION AND CHARACTERISTICS

Paragraph

General Description - - - - -	3
Characteristics - - - - -	4

3. GENERAL DESCRIPTION. - Model E-13 Athey Bottom Dump Trailers are heavy duty, load-carrying units equipped with crawler type, track-laying wheels and bottom dump bodies. They are designed for operation with track-laying type tractors as prime movers. Chassis and bodies of the units are riveted steel construction and the bodies are bolted to the chassis frame members. Doors are mounted to the bodies by hinge brackets and swinging hinge links.

A semi-automatic spring windup is mounted to the rear of the body and is provided for control of the doors. One end of the door cable is anchored to one end of the cable drum and is then threaded through the door sheaves, and the other end of the cable is anchored on the opposite end of the cable drum. The windup is equipped with a torsion spring for closing the doors and a hand lever is also provided on the windup for emergency hand winding of the doors.

Spring housings are bolted to each side of the trailer frame. The main axle passes through the trailer body, and each end of the axle extends through each spring housing. The upper ends of axle brackets are mounted on each end of the main axle. Stub axles, for mounting the wheels, are clamped to the lower ends of each axle bracket. Axle brackets are equipped with spring seats that are fitted into the lower end of the housing springs. Springs are railroad type, coil springs. The axle brackets and main axle are permitted to move up and down relative to the spring housings during operation. This provides a cushioning of the load on the axle group and Forged-Trak Wheels.

Drawbar is bolted to the front of the trailer frame and is equipped with a spring cushioned, swivel-type tractor hitch for hitching to the tractor.

4. CHARACTERISTICS. -

Capacity	13 cu. yds.
Length, Overall	21'4"
Width, Overall	10'0"
Height, Overall	6'9"
Body	
Length, Top of Body - Inside	13'6"
Width, Top of Body - Inside.	7'0"
Width, Door Opening.	4'4 $\frac{1}{2}$ "
Ground Clearance with Doors Open	9"
Frame	
Standard Channel - Size.	10"
Length of Bed.	15'0"
Width of Bed	4'8"
Forged-Trak Wheels	
Model.	7E
Capacity	20 tons
Width of Track	20"
Supporting Area.	16 sq. ft.
Main Axle Diameter	4 $\frac{1}{2}$ "
Stub Axle Diameter	4"
Gauge.	96"
Wheelbase.	13'4 $\frac{1}{2}$ "
Turning Radius	21'0"
Weight (Approximate)	16,800 pounds
Cable Length	44'6"
Cable Recommended (1 $\frac{1}{2}$ " - 6 x 37 Plow Steel, Hemp Center Lang Lay, Preformed)	

Section III

LUBRICATION

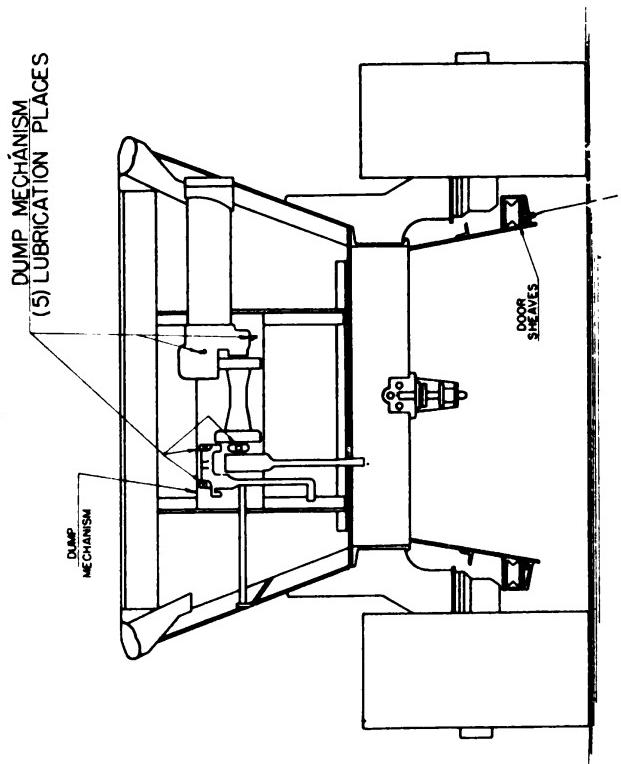
	Paragraph
Records - - - - -	5
Supplies- - - - -	6
Schedules - - - - -	7

5. RECORDS. - A complete record of lubrication should be kept for the Model E-13 Bottom Dump Trailer. Responsible personnel should execute a check sheet at regular intervals to indicate the actual operating hours and data at which each component receives such attention as prescribed.

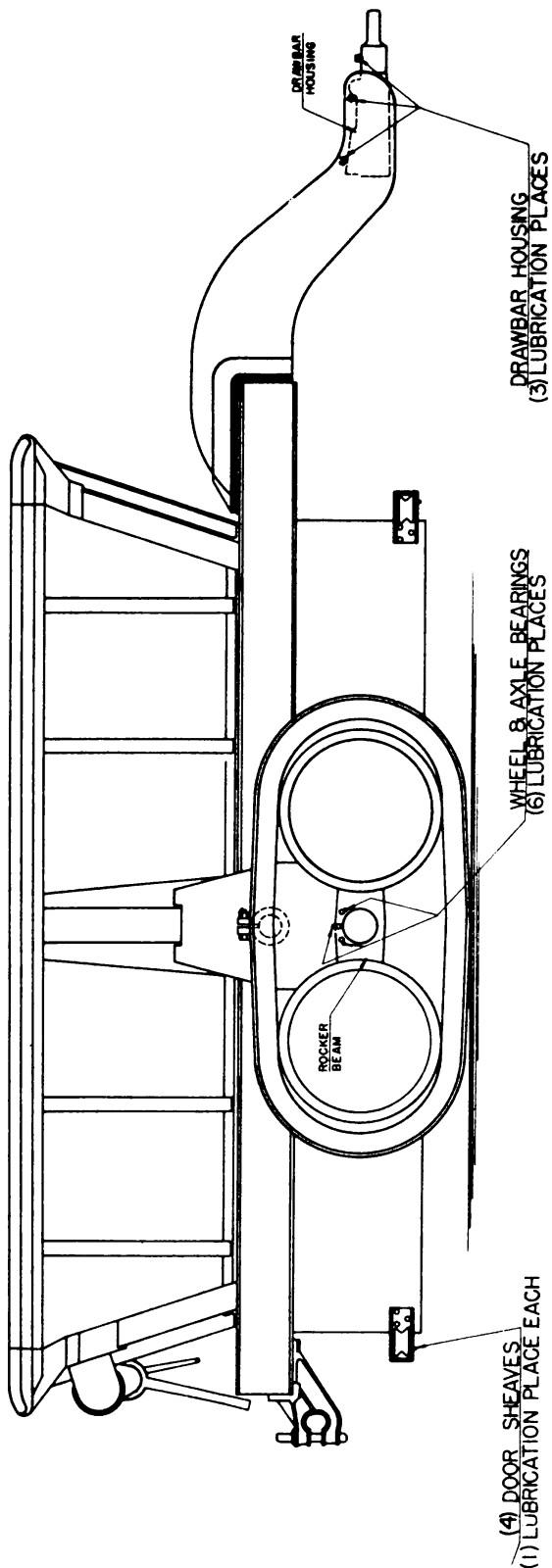
6. SUPPLIES. - Use CG-GREASE, general purpose
No. 1 (above + 32° F)
No. 0 (+ 32° F to 0° F)

7. SCHEDULES. - Lubricate all fittings after each eight hours used in accordance with Lubrication Chart on Page 7.

LUBRICATION CHART
FOR
FORGED-TRAK BOTTOM DUMP TRAILER
MODEL E-13



LUBRICATION CHART
FOR
FORGED-TRAK BOTTOM DUMP TRAILER
MODEL E -13



ALL LUBRICATION ABOVE TO BE DONE
WITH A PRESSURE TYPE GUN
USE CG-GREASE, GENERAL PURPOSE
No. 1 (above + 32° F)
No. 0 (+ 32° F to 0° F)
GREASE ALL POINTS AFTER EACH
8 HOUR WORKING PERIOD

LUBRICATION CHART
Fig. 3

Section IV

OPERATING INSTRUCTIONS

	Paragraph
Operation - - - - -	8
Making Fills - - - - -	9
Levee Construction - - - - -	10
Layout of Project - - - - -	11

8. OPERATION. - The E-13 Bottom Dump Trailer is a heavy duty, hauling unit designed for use with a crawler type tractor as a prime mover. The complementary tractor should deliver not less than 12,000 pounds drawbar pull at 1.4 m.p.h.

The trailer is provided with bottom drop doors and is primarily designed for handling earth with occasional rocks, not larger than 12 to 15 inches in any one dimension. The recommended load capacity is suggested at 35,000 pounds net.

Model E-13 Bottom Dump Trailers are designed for slow speed operation. To obtain maximum track life, a running-in period for at least 15 days at reduced speed is recommended and thereafter at normal tractor speed. Operate at reduced speeds over rock or exceedingly rough surfaces.

When operating on steep grades, trailers should not be permitted to coast down grade at high speeds. Care in operation should be taken in holding back trailers on grades, especially when operating trailers in tandem, so that the tractor will not jackknife against trailer frame or drawbar.

Avoid short turning when the Forged-Trak wheels are running in a rut as this places excessive strains on the equipment. Check wheels periodically for misalignment. Misalignment is indicated by uneven wear on guide flanges of track links or track wheels.

The doors may be operated by a trip rope attached to the front trip lever and controlled by the tractor operator; or by manual operation of the rear trip lever. The tension required on the torsion spring in the semi-automatic hand windup varies with the weight and stickiness of the material being handled. The spring should be so adjusted that the doors will close up with an impact, and will then drop back so that two or three short strokes of hand winding lever will be required to wind the doors up tight. The shock developed from the impact against the stop tends to loosen material that may be sticking to the doors. When they drop down, after bumping stop, the loosened material slides and lessens the possibility of building up on the doors.

An initial tension is put on the torsion spring when the doors are up. When the load is dumped, the weight of the material causes the doors to open and the tension on the spring is increased by the rotation of the drum shaft as the doors drop. The initial tension required on the torsion spring varies with the type of material. For example, it does not require as much tension to bring the doors up after dumping sand or gravel or similar material that cleans well when being dumped, as is required when dumping sticky materials. However, when handling sticky materials do not set the initial spring tension at more than one complete turn of the adjusting collar. When the initial spring tension is set too high, breakage of the spring will occur when the load is dumped. (See torsion spring adjustment, paragraph 36).

When sticky materials are being handled, it is advisable to clean the doors frequently to avoid over-stressing the windup torsion spring.

CAUTION: FOR SAFETY, WHEN CLEANING DOORS, ALWAYS BLOCK DOORS OPEN OR RELEASE TENSION ON TORSION SPRING BEFORE GOING INSIDE TRAILER.



DISCHARGING MATERIAL OVER END OF FILL
Fig. 4

9. MAKING FILLS. - When it is required to advance a fill into extremely soft earth or swamp formation that will not support the weight of the loaded trailer, the unit should be dumped along the edge of the fill on firm ground and the material should then be pushed from the edge of the fill with a bulldozer.

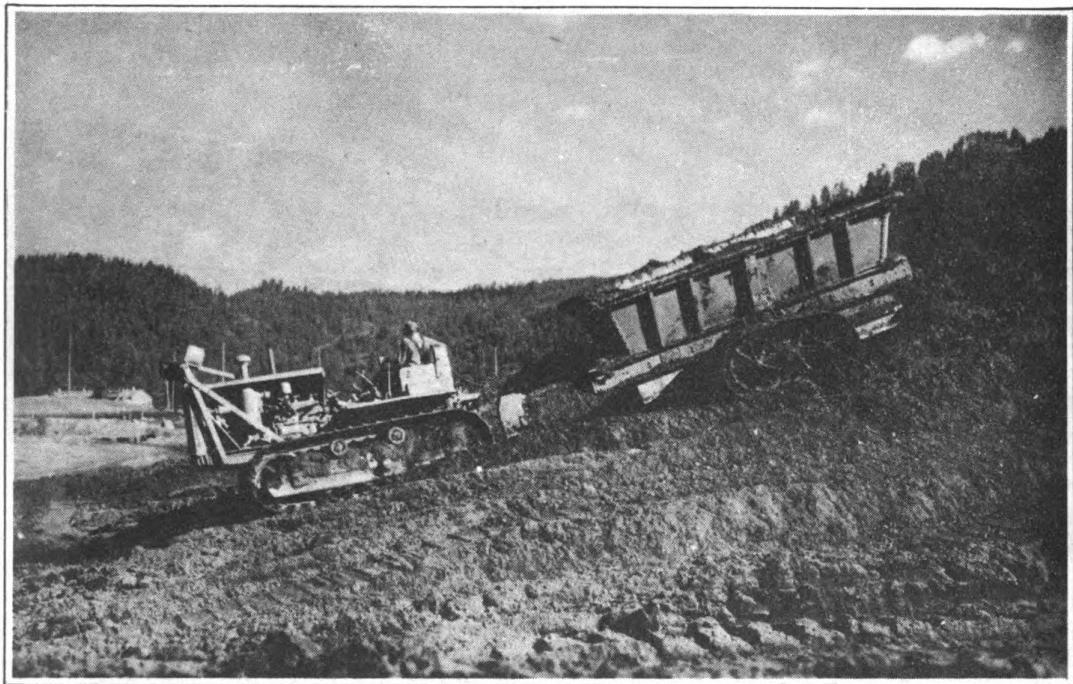
When a bulldozer is not available and it is necessary to make a crossing or traverse road across a ravine whose banks are too steep to travel down with tractors and trailers, the trailers may be backed to and partly over the edge so when bottom gates are opened the major portion of the material will fall into the ravine. This may be repeated until a slope is established suitable for tractor and trailer travel from which point the load may be carried down, dumped at end or on fill as desired, and the empty trailer hauled back to upper level on the established grade.

When it is desired to extend a fill over solid earth, it is sometimes expedient to pull the loaded trailers over the edge of the fill and dump the units as they are pulled down the descending grade, (fig. 4). This lessens the necessity for keeping a bulldozer available for pushing the material ahead of the dump.

When necessary, and as an emergency, to handle large size rocks, a method that is suggested, but is not recommended as good practice, is to select earth material that will fill the body at least level full and then place the large rocks on top of the load. When the tractor reaches the dump, it is field practice to push the rocks off the load and over the side of the body onto the fill by placing a push pole against the rock and using a bulldozer to push on the opposite end of the push pole. After the rock has been removed from the top of the load, the earth can then be discharged in the customary manner through the bottom doors of the trailer. This procedure should not be practiced except as an emergency measure.

10. LEVEE CONSTRUCTION. - When hauling dirt with bottom dump trailers, the load should be carried to the high point of the fill and the load dumped while traveling down grade. This makes the loaded haul on an established grade or ramp; while dumping, and hauling off the fill, the trailer is light and advantage is taken of gravity.

Levee hauls should be made from the top by laying down parallel windrows across levee base; then raising lift by pulling up on the first lift and dumping load, and then discharging material progressively in windrows in front of this load, thus establishing a haul road and raising the grade at the same time. Repetition of the procedure will increase the grade to the desired lift. Then the trailers may be dumped down grade on either side of the haul road.



DISCHARGING MATERIAL ON LEVEE
Fig. 5



PROJECT LAYOUT
Fig. 6

11. LAYOUT OF PROJECT. - A bottom dump trailer operation should be laid out so the hauling units will travel in a circular manner to avoid crossing of haul roads as much as possible. This method also eliminates congestion of haul units at the shovel or drag line and makes a more efficient operation. Haul units should be spotted for loading as close to the cut as possible without interfering with the digging of the material so they may be loaded with minimum swing of the shovel. A job layout of this nature is illustrated in Fig. 6.

Section V

GENERAL INSPECTION

	Paragraph
Purpose - - - - -	12
Body and Doors- - - - -	13
Frame - - - - -	14
Forged-Trak Wheels- - - - -	15
Semi-automatic Spring Windup- - - - -	16
Drawbar Assembly- - - - -	17
Spring and Axle Group - - - - -	18

12. PURPOSE. - To insure mechanical efficiency it is necessary that Model E-13 Bottom Dump Trailers shall be systematically inspected by personnel charged with the operation, adjustments, maintenance, and overhauling in order to obtain the maximum in efficient performance.

Listed in the following paragraphs is a general inspection procedure to be followed.

13. BODY AND DOORS. - Inspect mounting bolts of body to frame and tighten or replace as required. Check body and door hinge brackets, replace broken brackets and tighten or replace mounting bolts as required. Check door hinge links and hinge link bolts and replace as required. Examine door sheave brackets for fractures and repair by welding or replace bracket as required. Examine door sheaves, sheave bearings, sheave pins and recondition as necessary. Check body and doors for fractures and recondition as necessary. Check doors for alignment and straighten as required. For efficient performance of doors and windup, it is essential that doors be kept in alignment and in good condition.

Note: Doors may be straightened by a shop press. If no press is available, doors may be straightened by placing them on suitable blocks with center of bent section up. Then place a heavy wood block across the center of the bent section and drive a tractor upon the wood block and bend the door back in line. If care is used in arranging the blocks properly, doors may be satisfactorily lined up in this manner.

14. FRAME. - Inspect frame members for cracks or fractures. Check for loose rivets in frame members and in all brackets and attachments that are riveted to the frame. Investigate for indications of fatigue cracks at all drilled holes where bolts are used in frame members.

15. FORGED-TRAK WHEELS. - a. Forged-Trak Tracks. Examine all track pins to determine pins that are loose or working in bearings of track links. Examine track links for badly worn pin holes that cannot be corrected by installation of oversize track pins. Check for broken or fractured track links or track pin bushings. Check tracks for broken lock pins and for loose or broken track plate bolts.

b. Rocker Beam and Track Wheel Assembly (1) - Rocker Beam. Check rocker beam for fractures and alignment. Check rocker beam bushing for wear. Examine lubrication fittings and grease lines. Check cage cap screw threads and dowel pin holes.

(2) - Bearing Cage. Check inner and outer surfaces of cage flanges for galled or scored condition. Examine oil seal seat for nicks or burrs.

(3) - Spindle. Check spindle for fatigue cracks. Examine keyway and tapered ends of spindle for indications of wear. Examine threaded ends of spindle.

(4) - Spindle Bearing. Examine surface conditions of balls and races. Check bearing for axial looseness and radial looseness. Check balls for surface pits or corrosion.

(5) - Track Wheel. Check track wheel for wear in hub and in keyway. Examine wheel rim for wear and check wheel for fractures in spokes, rim and hub.

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16. SEMI-AUTOMATIC SPRING WINDUP. - Check ratchets and trip lever dogs for wear and replace as required. Worn dogs may be built up by welding and refaced by grinding. Check latch link pins, lever pins and dog pins for wear and replace as necessary. Check cable clamps and cable attachment to cable drum. Examine dog and plunger spring. Examine windup assembly for drum shaft bearing wear. Examine hand winding lever and rear trip lever for fractures and for wear and recondition as required. Check windup channel mounting bolts and tighten as required. Check windup torsion spring and replace as required. Examine front trip lever linkage and replace link pins, links and levers as required. Examine rope sheave brackets and rope sheaves and replace as necessary.

17. DRAWBAR ASSEMBLY. - Check drawbar mounting bolts and tighten as required. Examine drawbar for fractures and recondition by welding or by installation of reinforcing plate over fractured section. Examine drawbar fork housing for fractures and recondition by welding as required. Check drawbar studs for wear and replace as required. Examine fork spring and replace as necessary. Check drawbar fork, fork block and block retaining bolt and replace the parts or recondition as required. Wearing parts of fork and fork block may be built up and reborod to proper size.

18. SPRING AND AXLE GROUP. - Check spring housing mounting bolts and tighten or replace as necessary. Check spring housings and axle brackets for fractures and correct by welding as required. Check axle bracket clamp bolts for clamping bracket to main axle and to stub axle and tighten as necessary. Examine housing springs for breakage and replace as necessary. Check housing spring retainer bolts for breakage and replace as necessary. Examine bracket guides for wear and replace as necessary. Check and tighten guide cap screws. Examine stud axle for wear.

SECTION 2

MAINTENANCE REPAIR

Section VI

FORGED-TRAK WHEELS

INTRODUCTION: Part I of this section covers instructions regarding field service of Forged-Trak Wheels.

Part II of this section covers instructions pertaining to complete shop reconditioning of Forged-Trak Wheels.

Part I

FIELD SERVICE OF FORGED-TRAK WHEELS

	Paragraph
Description - - - - -	19
Trouble Shooting- - - - -	20
Maintenance and Inspection- - - - -	21
Track Link Replacement- - - - -	22
Lock Pin Replacement- - - - -	23
Track Pin Replacement - - - - -	24
Track Wheel Replacement - - - - -	25
Bearing Cage and Oil Seal Replacement - - - - -	26

19. **DESCRIPTION** (fig. 7). - The Forged-Trak Wheel consists of a crawler type Forged-Trak track and a rocker beam and track wheel assembly. The track is assembled under hydraulic pressure to form an endless rigid track structure. Track links are in tensile stress under load. Track wheels or load carrying wheels roll on raised rails of the track links. Track plates are bolted to outer surfaces of track links with heat treated alloy steel cap screws. Model 7E wheels equipped with 20" track plates give a bearing area of 16 sq. ft. per pair.

a. Construction. - (1) (fig. 8) - The Forged-Trak track is of box section design providing rigidity and eliminating any tendency of the structure to twist or weave under load. The interlocking members of the upper structure are self-aligning, self-cleaning and frictionless.

An exploded view of a track link unit is illustrated in fig. 9. Track pin bearings are the pin and bushing type. Track pins are heat treated alloy steel. Bushings are carbonized and hardened. Track links are drop-forged special steel forgings. Track pins and bushings are assembled with the drop-forged track links under hydraulic pressure. Lock pins are drop-forged and are full-floating in the track which assures maximum bearing surface and provides self-alignment of the upper truss structure, equalizing wear and increasing rigidity of the entire track.

(2) - (fig. 10) - Rocker beam and track wheel assembly of Model 7E Forged-Trak Wheel consists of a pressed steel rocker beam, cast steel track wheels, tapered track wheel spindles mounted on ball bearings. Ball bearings are mounted in bearing cages that are sealed against loss of lubricant and entrance of foreign matter by grease retainers.

The rocker beam is box section type pressed steel, welded construction. End castings for spindle mountings provide a grease chamber for lubrication of spindle bearings. The center hub of the rocker beam is equipped with a replaceable hardened steel bushing.

Track wheels are heat treated, steel castings provided with tapered hubs and rail type spokes.

Tapered spindles are heat treated alloy steel.

Bearings are single row, large ball, deep groove shielded type, carrying both radial and thrust loads.

Bearing cages are the detachable type, providing rigid mounting for bearings and complete enclosures for oil retainers. Cages are securely attached to the rocker beam by the use of dowel pins and heat treated alloy steel cap screws.

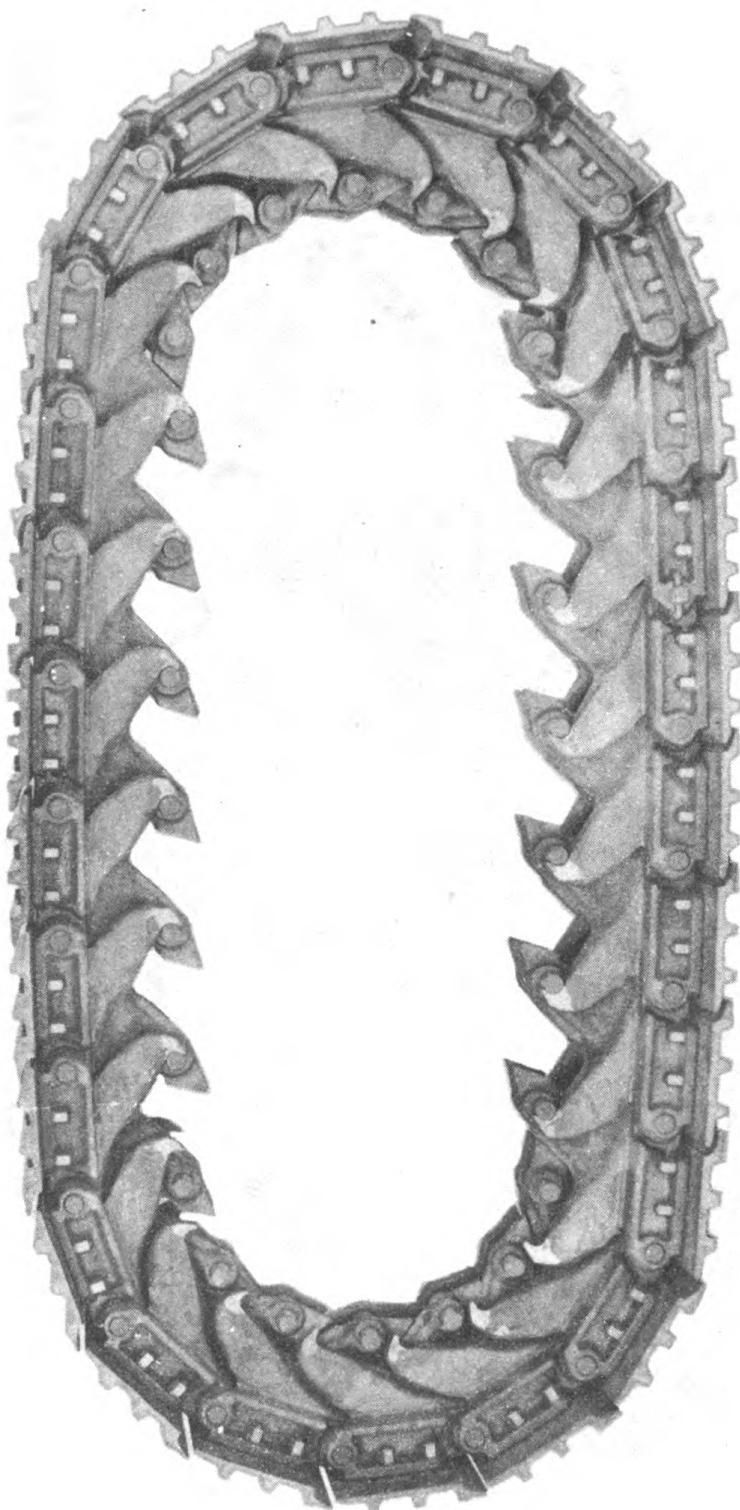
b. Operation. - The Forged-Trak track should be mounted with arrows of links on the ground pointing in the direction of vehicle travel. The direction of track rotation may be reversed, but on all operations where Forged-Trak wheels are used, most of the travel is in the forward direction; and when tracks are mounted as directed above, material will clean better from the track as the wheels roll forward. Rocker beam and track wheel assembly should be mounted with grease fittings up and to the outside of the vehicle.

ROCKER BEAM & TRACK WHEEL ASSEMBLY
FORGED-TRAK TRACK ASSEMBLY.



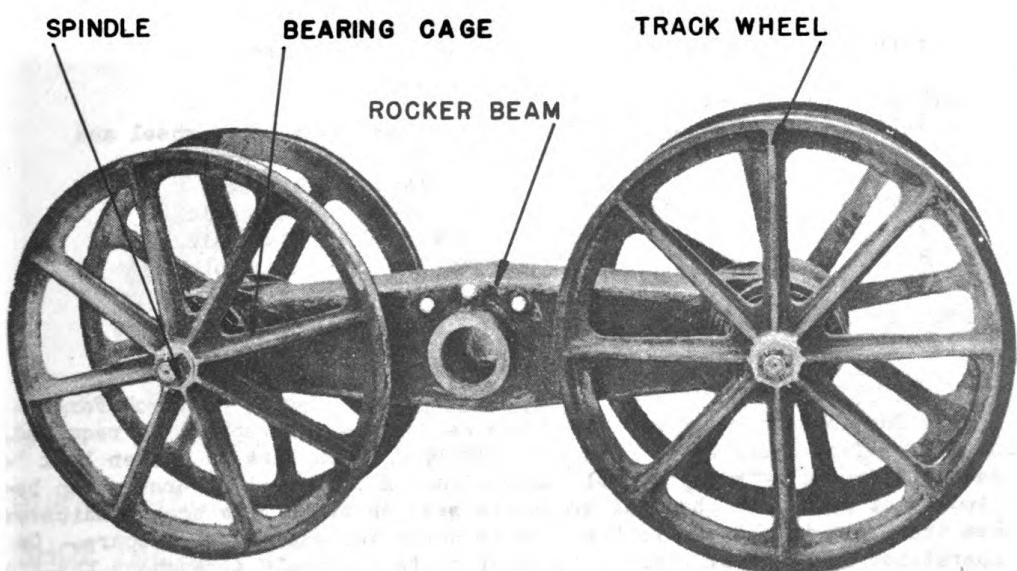
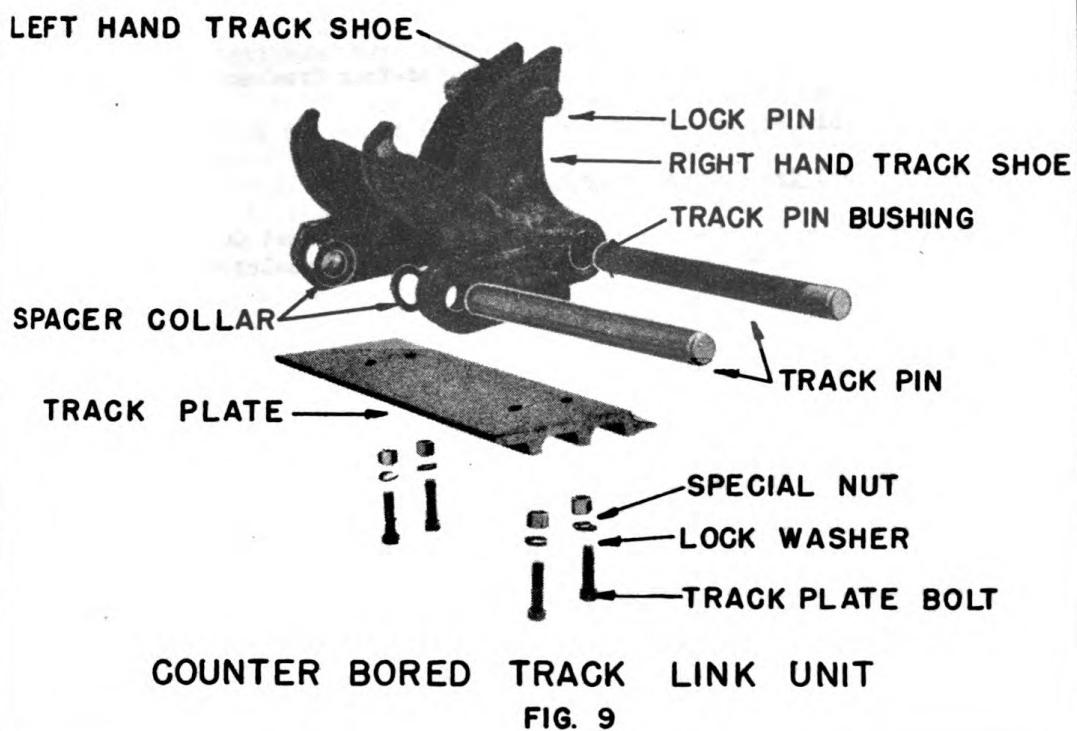
FORGED - TRAK WHEEL ASSEMBLY

FIG. 7



FORGED - TRAK TRACK ASSEMBLY

FIG. 8



ROCKER BEAM & TRACK WHEEL ASSEMBLY

FIG. 10

c. Specifications:

Track Assembly

Make - - - - - Athey Truss Wheel Co.
Type - - - - - Forged-Trak Crawler Track
Wheel Model No. - - - - - 7E
Mfr's Assembly No. - - - - - 7E-50

Rocker Beam and Track Wheel Assembly

Make - - - - - Athey Truss Wheel Co.
Type - - - - - Forged-Trak Crawler Track
Wheel Model No. - - - - - 7E
Mfr's Assembly No. - - - - - 7E-3

20. TROUBLE SHOOTING. -

<u>Symptom and probable cause</u>	<u>Probable remedy</u>
<u>Abrupt sag in track during operation.</u> Broken track link. Broken lock pin.	Replace track link. Replace lock pin
<u>Abnormal gap between track plates.</u> Loose track plate. Broken track pin.	Tighten plate bolts. Replace track pin.
<u>Movement of track wheel on spindle.</u> Loose wheel retaining nut. Cracked wheel hub. Sheared wheel retaining key.	Tighten wheel retaining nut. Replace track wheel. Replace wheel retaining key.
<u>Excessive loss of grease.</u> Damaged grease retainer. Loose bearing cage bolts. Worn or damaged bearing.	Replace grease retainer. Replace and tighten bearing cage bolts. Advise Chief Mechanic.
<u>Locking of tracks or wheels.</u> Entrance of rocks or foreign material in track structure. Broken track wheel. Broken track wheel bearing. Broken track wheel spindle. Broken rocker beam.	Reverse rotation of wheel and remove obstruction. Replace track wheel. Advise Chief Mechanic. Advise Chief Mechanic. Advise Chief Mechanic.
<u>Uneven wear on guide flanges of track rails or track wheels.</u> Bent axle.	Advise Chief Mechanic.

21. MAINTENANCE AND INSPECTION. - a. Forged-Trak Tracks. - Check Forged-Trak tracks for loose or broken plate bolts and tighten or replace as required. Examine Forged-Trak links for broken lock pins and track links. Broken lock pins can be detected by minor visual inspection. An abnormal or uneven gap between two track plates or abnormal excessive wear on track link hooks indicates a broken track pin in the particular link in which the gap or wear occurs. On most operations Forged-Trak track parts wear quite uniformly throughout the track structure. When hooks and lock pins of track links are badly worn, the track rails, track pins and track pin bushings are also usually pretty well worn. When this condition exists the slack in the track falls to the back of the wheel assembly. When tracks are worn to the extent that the above conditions exist, it is recommended that the entire track assembly be replaced with a new track assembly. On some operations when the track assembly is changed, it is advisable to replace the track wheels. It is necessary to replace track wheels when in-

stalling new tracks if the rims of the wheels are worn unevenly. Rims of track wheels can be built up with welding rod and turned to give an even wearing surface.

b. Rocker Beam and Wheel Assembly. - Check track wheel tapered spindles and hubs of track wheels for excessive wear. Also check keys and keyways in spindles and wheels. It is necessary to replace spindles if they are worn to the extent that a good fit cannot be secured between wheel hub and spindle. Check movement of spindle in bearing cages. Worn bearings should be replaced with new bearings. When spindle or bearing replacements are necessary, the Chief Mechanic should be notified. Check oil seals in bearing cages. Where there is no indication of excessive loss of lubricant through bearing cages, it will not be required to remove cages and further inspect seals. Any visible cracks or fractures in the rocker beam should immediately be reported to the Chief Mechanic.

22. TRACK LINK REPLACEMENT. - (fig. 11 to 20 incl.)

Tools:	15/16" open end wrench	18 pound sledge
	15/16" offset socket wrench	Cutting torch
	1" back out punch	Tank of acetylene
	1" drift pin 15" long	Tank of oxygen
	1" bar - 3' long	

a. Removal. - (1) - Roll wheel assembly forward until TRACK LINK to be removed is at back of track wheel.

(2) - Remove TRACK PLATE BOLTS on link to be removed by holding tapered NUTS with open end wrench and turning track plate BOLTS with socket wrench.

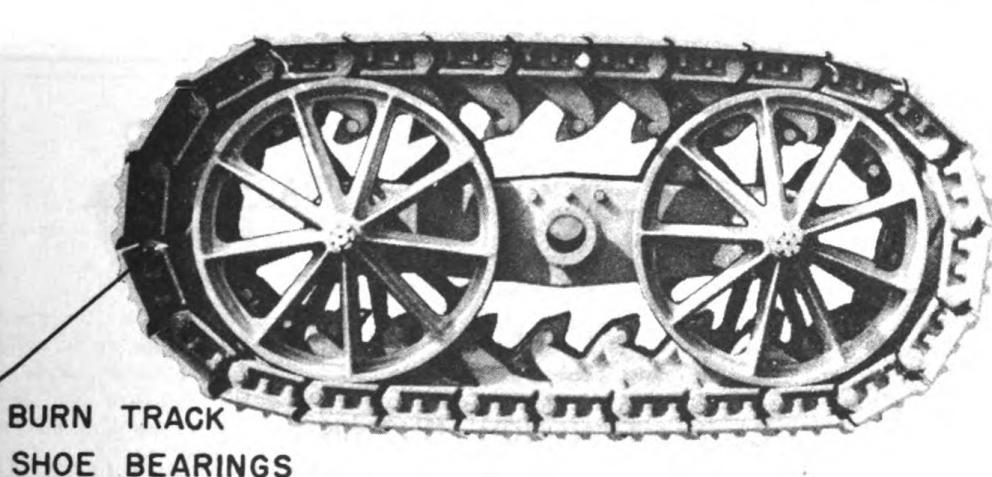
(3) - With cutting torch, burn through both right and left hand TRACK SHOES (at points indicated in fig. 11).

(4) - Drive out TRACK PIN using sledge and 1" drift pin thus breaking the TRACK apart (as shown in fig. 12).

(5) - Burn through TRACK PIN BUSHING and TRACK PIN at points R and L (fig. 13).

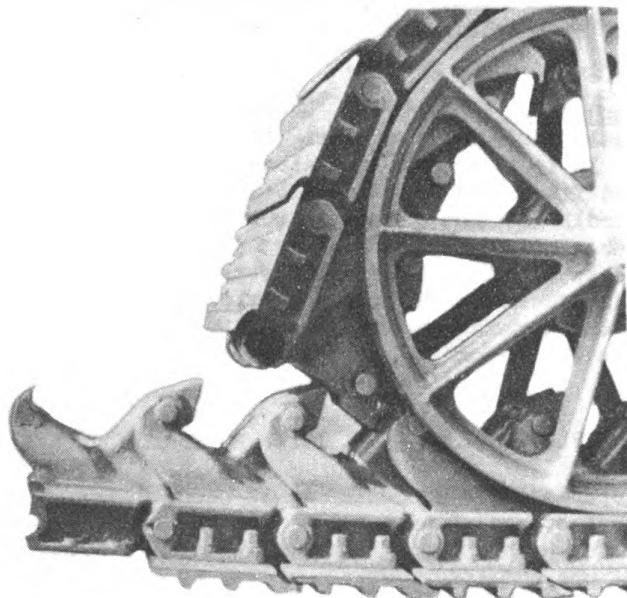
(6) - Drive out ends of TRACK PIN with sledge and back out punch.

(7) - Remove right and left hand TRACK SHOES.



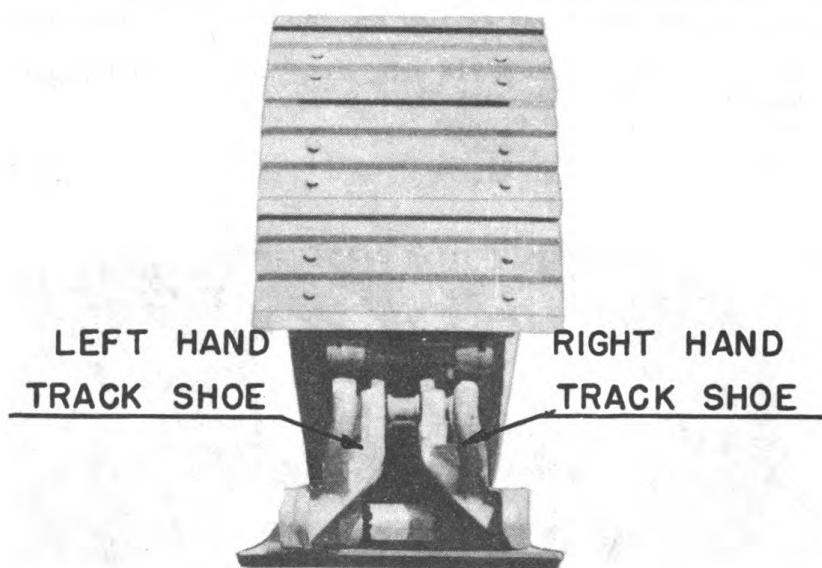
UNCOUPLING TRACK

FIG. 11



TRACK UNCOUPLED

FIG. 12



BURN THROUGH BUSHING
AND TRACK PIN
TRACK SHOE REMOVAL

FIG. 13

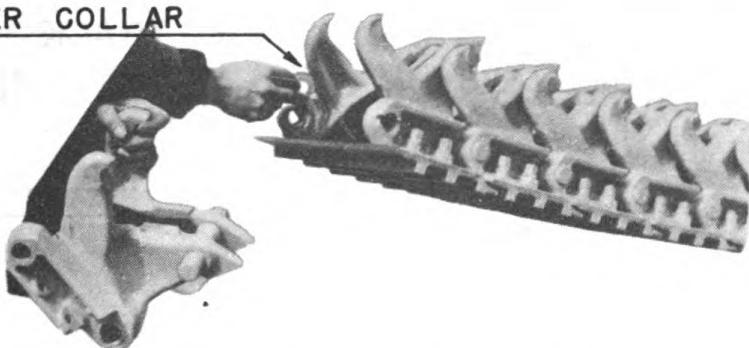
b. Installation. -

15/16" open end wrench
18 pound sledge

15/16" socket wrench

- (1) - Put track plate on replacement track link unit.
- (2) - Insert track plate bolts, start tapered nuts and set beveled surface of nuts to correspond with beveled surface of track link.
- (3) - Hold nuts with open end wrench and tighten by turning bolts with socket wrench.
- (4) - Insert spacer collars in track. (fig. 14)
- (5) - Place track link unit in track (fig. 15) and drive in track pin.
- (6) - Insert 1" bar in track pin hole of end track link.
- (7) - Roll track forward over rocker beam and wheel assembly as complete Forged-Trak wheel is moved ahead. (fig. 16)
- (8) - Hook the hooks of the upper link over the lock pin of the link in front of the wheel. (fig. 17)
- (9) - Roll wheel assembly back or move trailer back with the tractor until track comes together and track pin holes line up. (fig. 18 and fig. 19)
- (10) - Drive in track pin, thus coupling the track. (fig. 20)

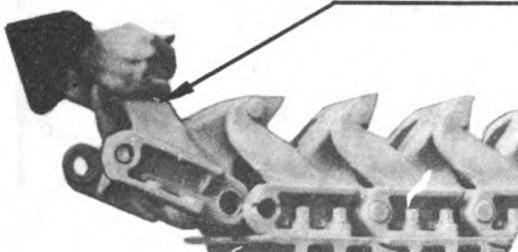
SPACER COLLAR



INSERTING SPACER COLLAR

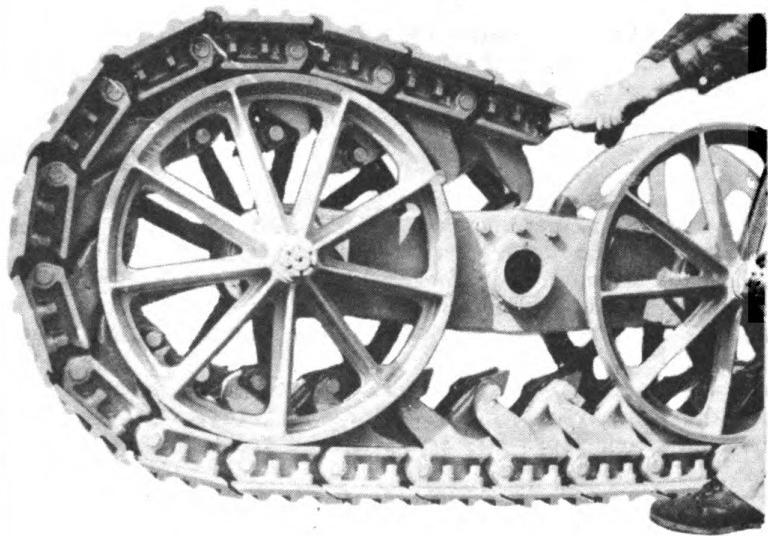
FIG. 14

REPLACEMENT TRACK LINK



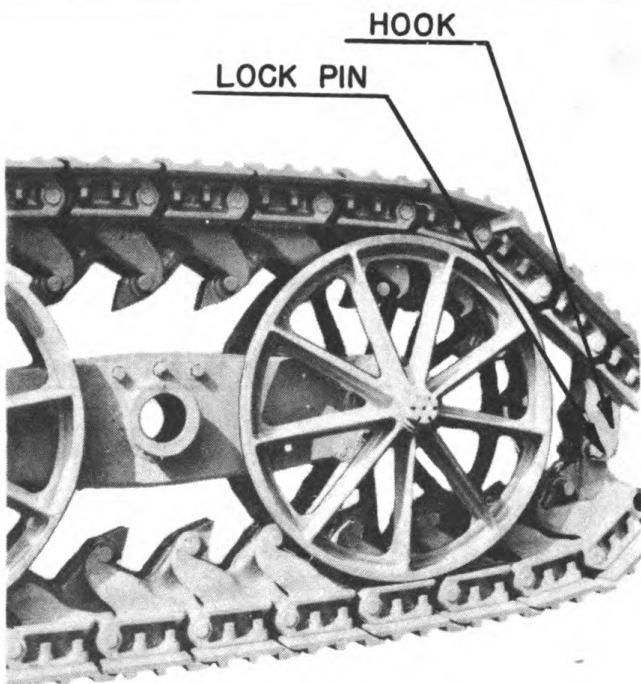
INSTALLING REPLACEMENT TRACK LINK

FIG. 15



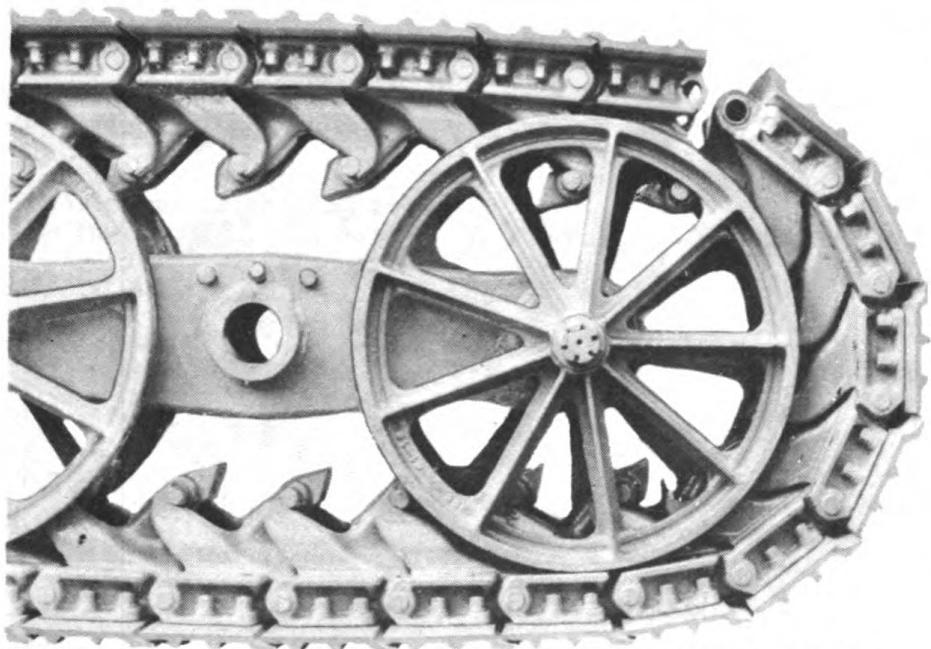
ROLLING TRACK OVER TRACK
WHEELS

FIG. 16



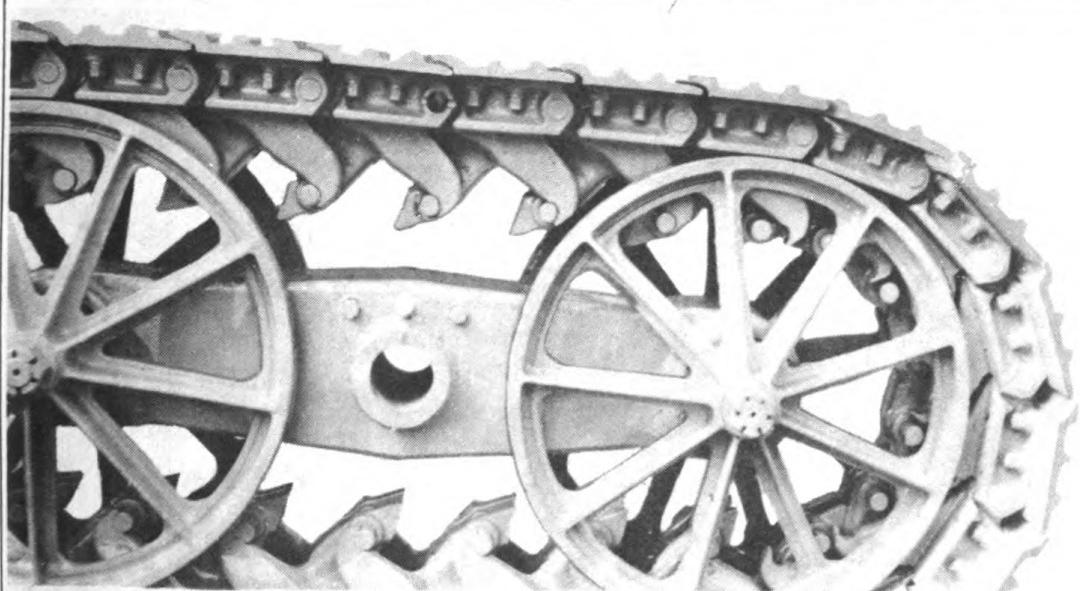
PLACING LINK HOOKS
OVER LOCK PIN

FIG. 17



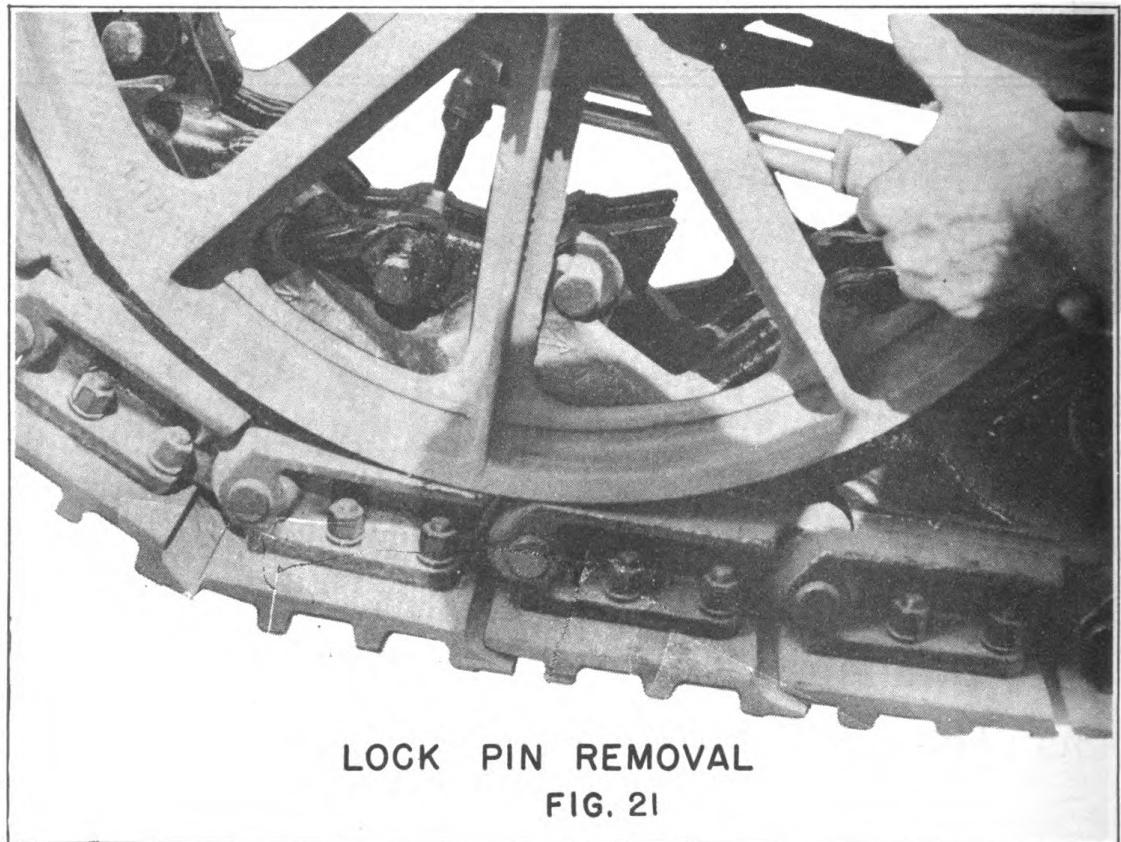
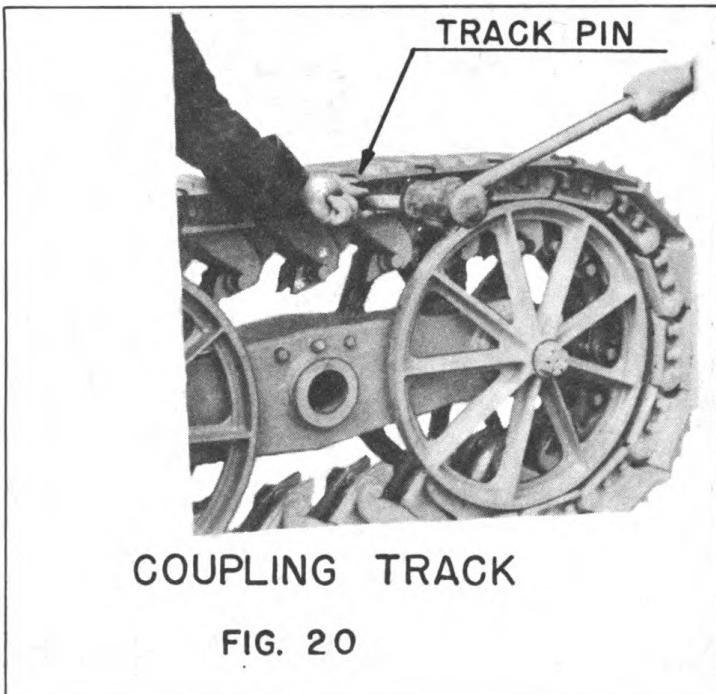
LINING UP TRACK PIN HOLES

FIG. 18



TRACK READY FOR COUPLING

FIG. 19



23. LOCK PIN REPLACEMENT. -

Tools: Cutting torch

a. Removal. - (1) - Move track into position so that link containing LOCK PIN to be removed is just contacting the ground at one end of the Forged-Trak Wheel.

(2) - With cutting torch cut LOCK PIN in two places at inside of right and left hand track shoes. (fig. 21)

(3) - Push ends of LOCK PIN through track link boss and remove from track.

b. Installation. -

Cutting torch

18 pound sledge

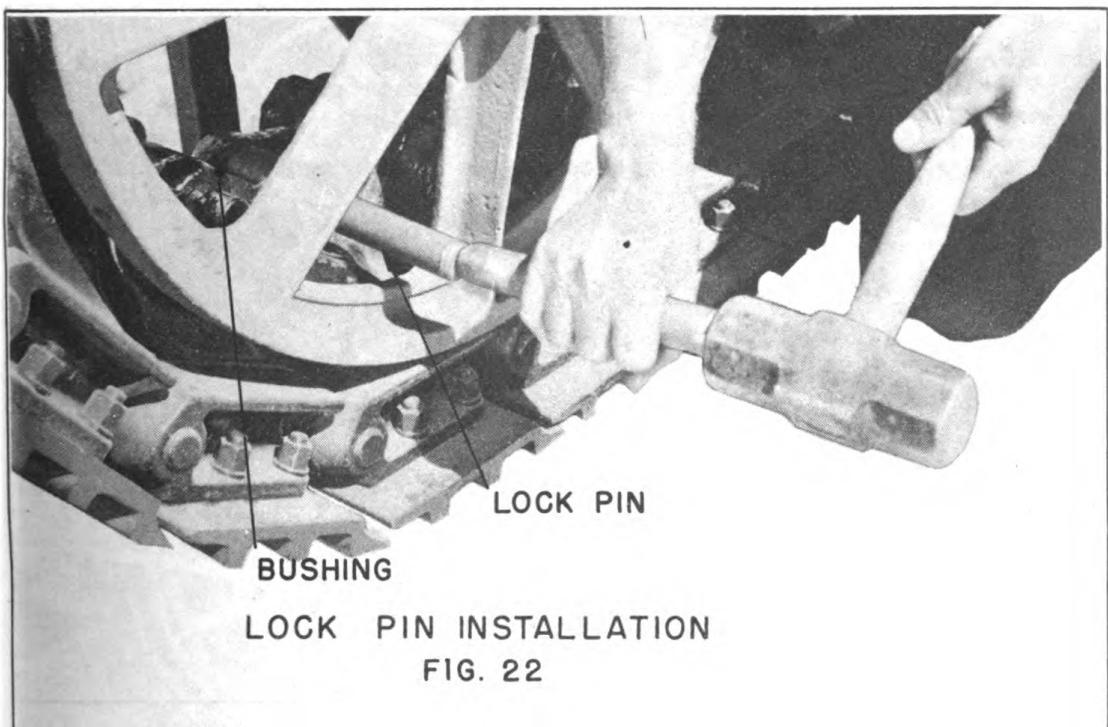
(1) - Place replacement lock pin bushing between right and left hand track shoes.

(2) - Enter end of replacement lock pin through track link boss and into bushing. (fig. 22)

(3) - Tap end of pin with sledge to hold pin and bushing in place in the track.

(4) - Heat a strip about $\frac{1}{2}$ " wide across the length of the bushing to a cherry red with the torch.

(5) - Drive replacement lock pin in bushing until centered in track link.



24. TRACK PIN REPLACEMENT

Tools: Cutting or heating torch
Tank of acetylene
Tank of oxygen

1" drift pin 15" long
1" back out punch
18 pound sledge

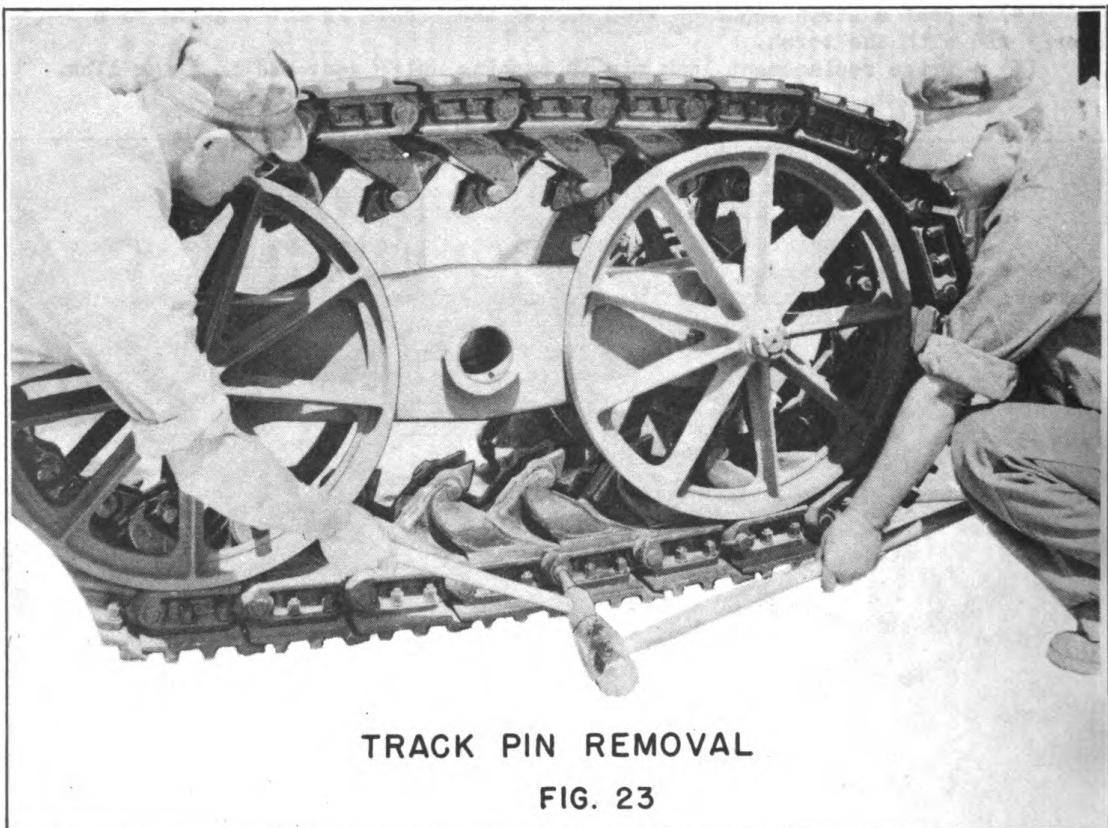
a. Removal. (1) - Move Forged-Trak wheel so that TRACK PIN to be removed is on lower side of track.

- (2) - Heat bearings of track link to a dull red.
- (3) - Loosen TRACK PIN using back out punch and sledge. (fig. 23)
- (4) - Drive out track pin using 1" drift.

b. Installation

Cutting or heating torch 18 pound sledge

- (1) - Heat bearings of track link with torch.
- (2) - Sledge track pin to place in track link.



TRACK PIN REMOVAL

FIG. 23

25. TRACK WHEEL REPLACEMENT

Tools: Pliers
2-3/4" hexagon wheel wrench
Machinist hammer
 $\frac{1}{2}$ " punch

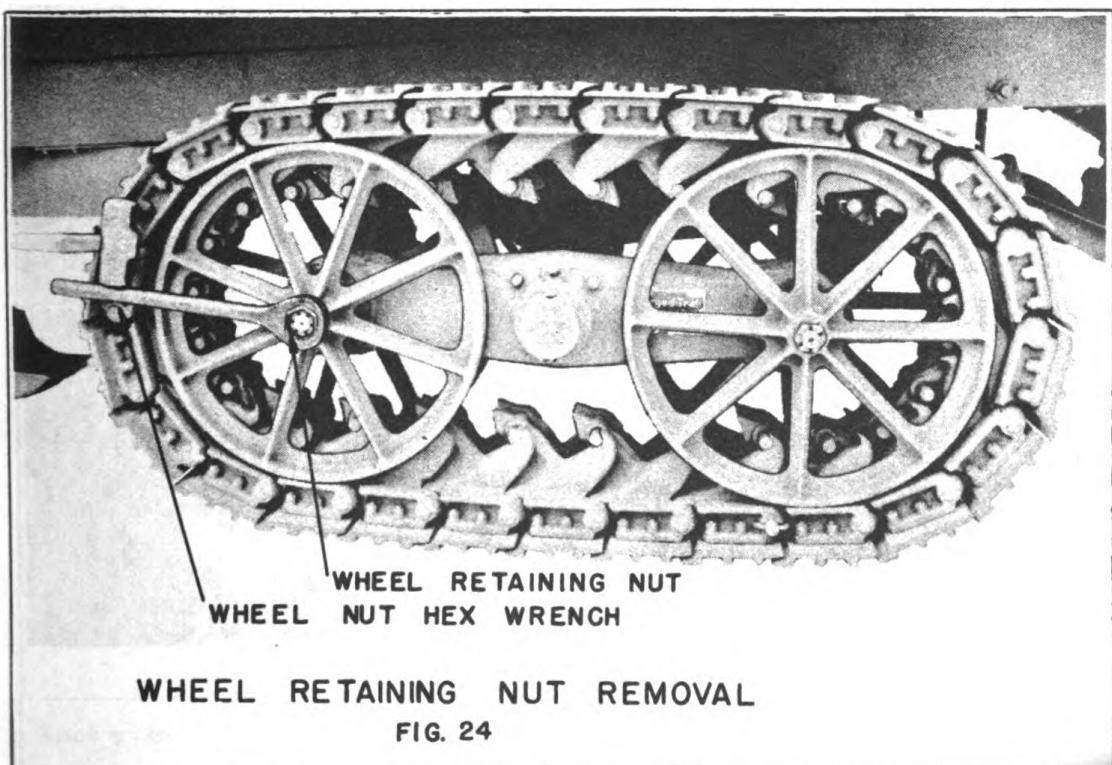
Knock out type wheel puller
Track jack
15 pound sledge
10" screw driver

- a. Removal.
 - (1) - If trailer is unhooked from tractor block under drawbar or front of frame to support front of unit.
 - (2) - Put a suitable jack under rear corner of frame and raise the frame sufficiently to relieve pressure on TRACK WHEEL.
 - (3) - Remove COTTER KEY from wheel retaining nut.
 - (4) - Remove wheel retaining NUT with hexagon wheel wrench. (fig. 24)
 - (5) - Remove wheel retaining WASHER.
 - (6) - Screw knock-out type WHEEL PULLER on end of track wheel SPINDLE and tighten with wheel wrench.
 - (7) - Sledge two or three sharp blows on knock out wheel puller until TRACK WHEEL is loosened. (fig. 25)
 - (8) - Remove wheel puller and TRACK WHEEL from spindle. (fig. 26)

b. Installation

2-3/4" hexagon wheel wrench Machinist hammer
 $\frac{1}{2}$ " punch

- (1) - Place wheel on spindle aligning keyway in spindle with keyway in hub of wheel.
- (2) - Drive in wheel retaining key using $\frac{1}{2}$ " punch and hammer having beveled end of key toward rocker bearing and beveled side of key next to spindle.
- (3) - Put on wheel retaining washer and wheel retaining nut and tighten.
Note: Wheel retaining nuts should be tightened extremely tight and may be tightened by sledging on hexagon wheel wrench or by using a 6" pipe extension on end of wheel wrench.
- (4) - Insert cotter key through wheel retaining nut.



26. BEARING CAGE AND OIL SEAL REPLACEMENT (fig. 26)

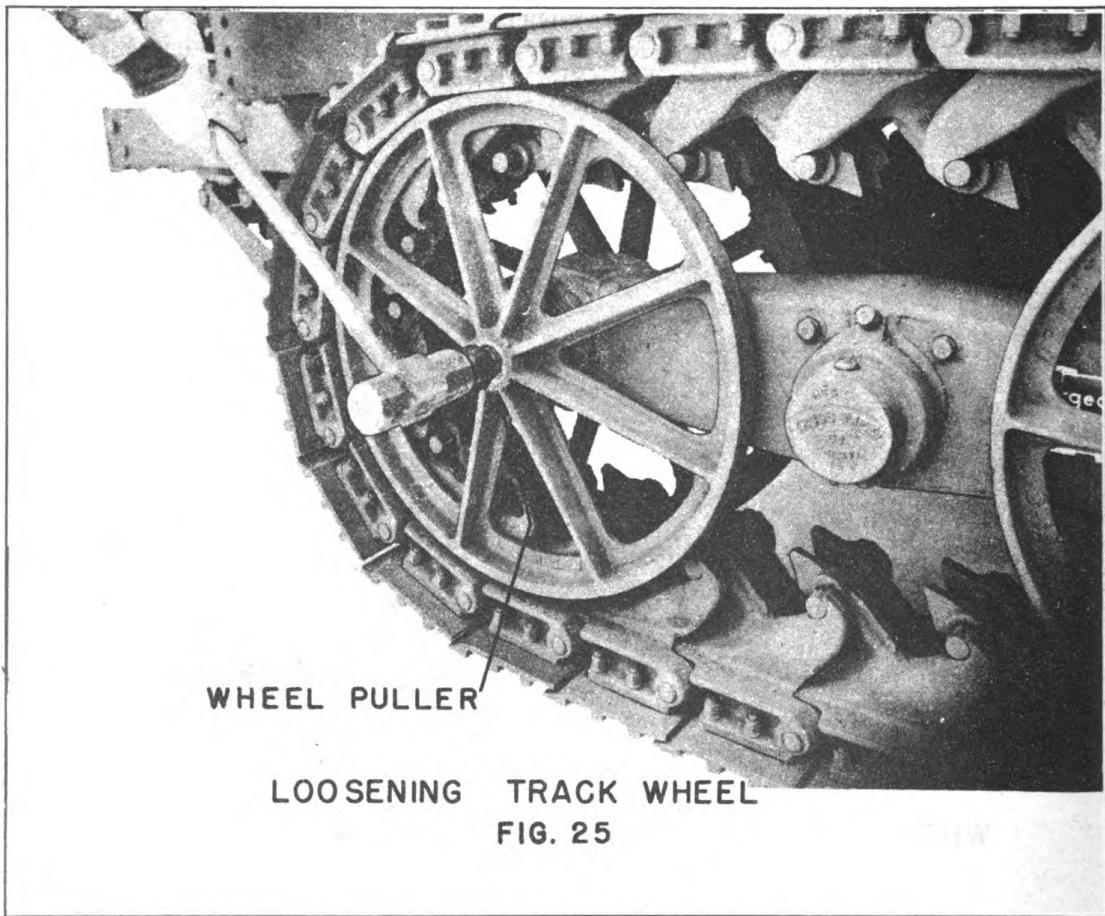
Tools:	2-3/4" hexagon wheel wrench	Wheel puller
	3/4" open end wrench	Machinist hammer
	Pliers	Track jack
	18 pound sledge	1/2" punch
	10" screwdriver	

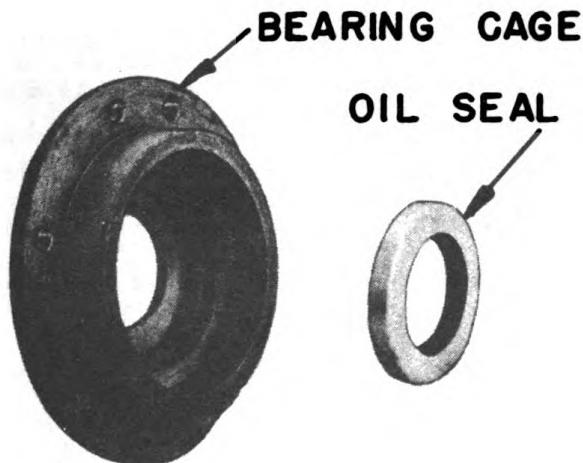
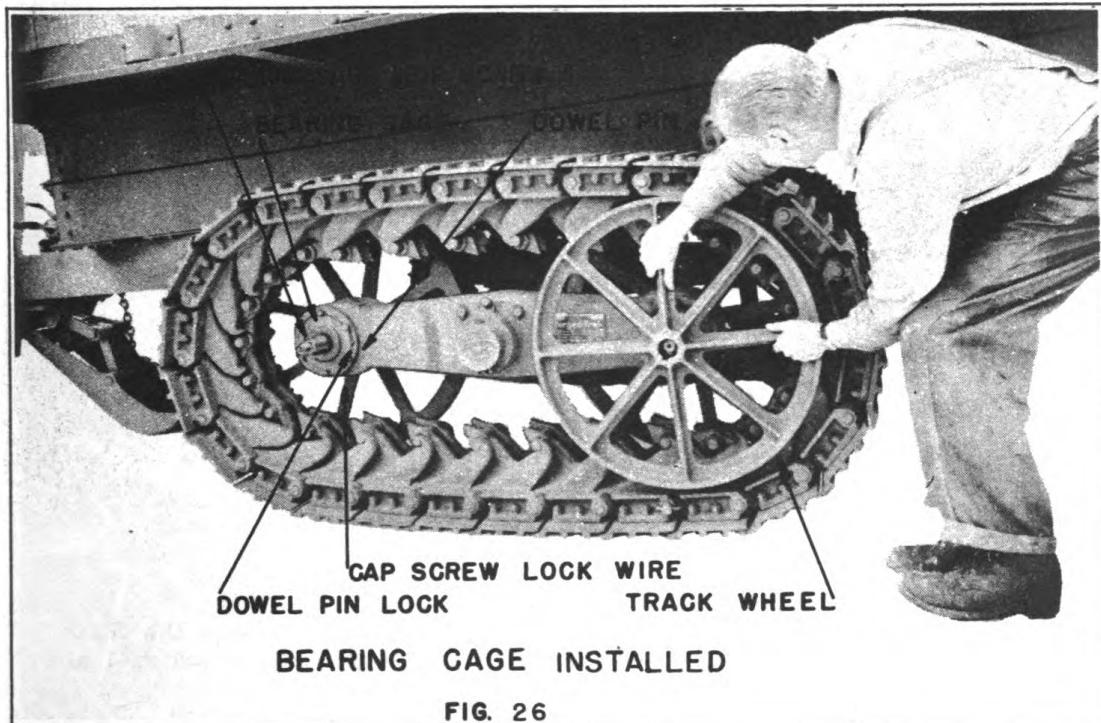
- a. Removal. - (1) - Remove TRACK WHEEL, see paragraph 25.
(2) - Remove bearing cage cap screw LOCK WIRE.
(3) - Remove 6 bearing cage CAP SCREWS.
(4) - Insert screw driver between flange of bearing cage and surface of rocker beam and work CAGE from rocker beam.
(5) - Drive OIL SEAL from seat of bearing cage with hammer and punch.

b. Installation.

2-3/4" hexagon wheel wrench	Pliers
3/4" open end wrench	Machinist hammer

- (1) - Put oil seal in bearing cage with feather edge toward the outside. Tap in evenly until seal is seated in cage. (fig. 27)
(2) - Put bearing cage over spindle and line dowel pin holes in cage with dowel pin holes in rocker beam. Tap cage to place over bearing.
(3) - Drive in dowel pins.
(4) - Put dowel pin locks in place over dowel pins. Insert bearing cage cap screws and tighten.
(5) - Install cap screw lock wire.
(6) - Install track wheel. See paragraph 25.





BEARING CAGE ASSEMBLY

FIG. 27

Part II

SHOP RECONDITIONING OF FORGED-TRAK
WHEELS

	Paragraph
Removal of Forged-Trak Wheel Assembly - - - - -	27
Shop Maintenance and Repair of Forged-Trak Track- - - - -	28
Install Forged-Trak Track Assembly- - - - -	29
Disassembly of Rocker Beam and Track Wheel Assembly - - - - -	30
Maintenance and Repair of Rocker Beam and Track Wheel Assembly- - - - -	31
Assembly of Rocker Beam and Track Wheel Assembly- - - - -	32
Installation of Forged-Trak Wheel Assembly- - - - -	33

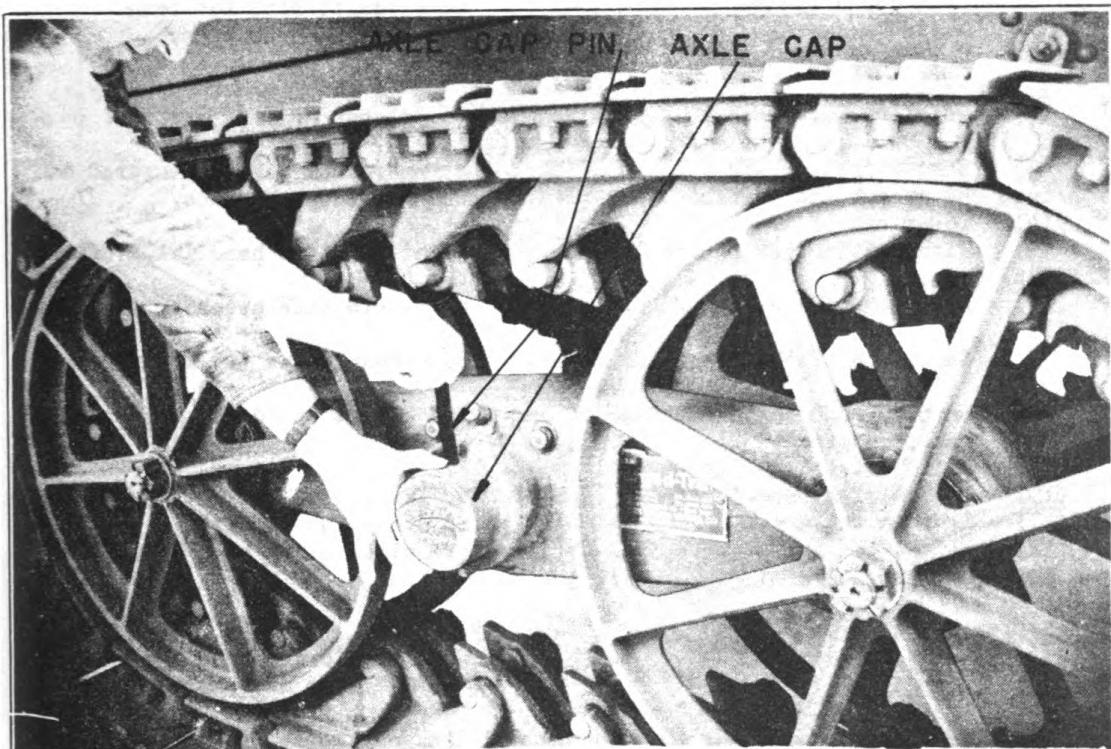
27. REMOVAL OF FORGED-TRAK WHEEL ASSEMBLY. -

Tools: Track jack $\frac{1}{2}$ " punch
Pliers 7/8" back out punch
8' chain 7/8" drift pin, 15" long
18 pound sledge.

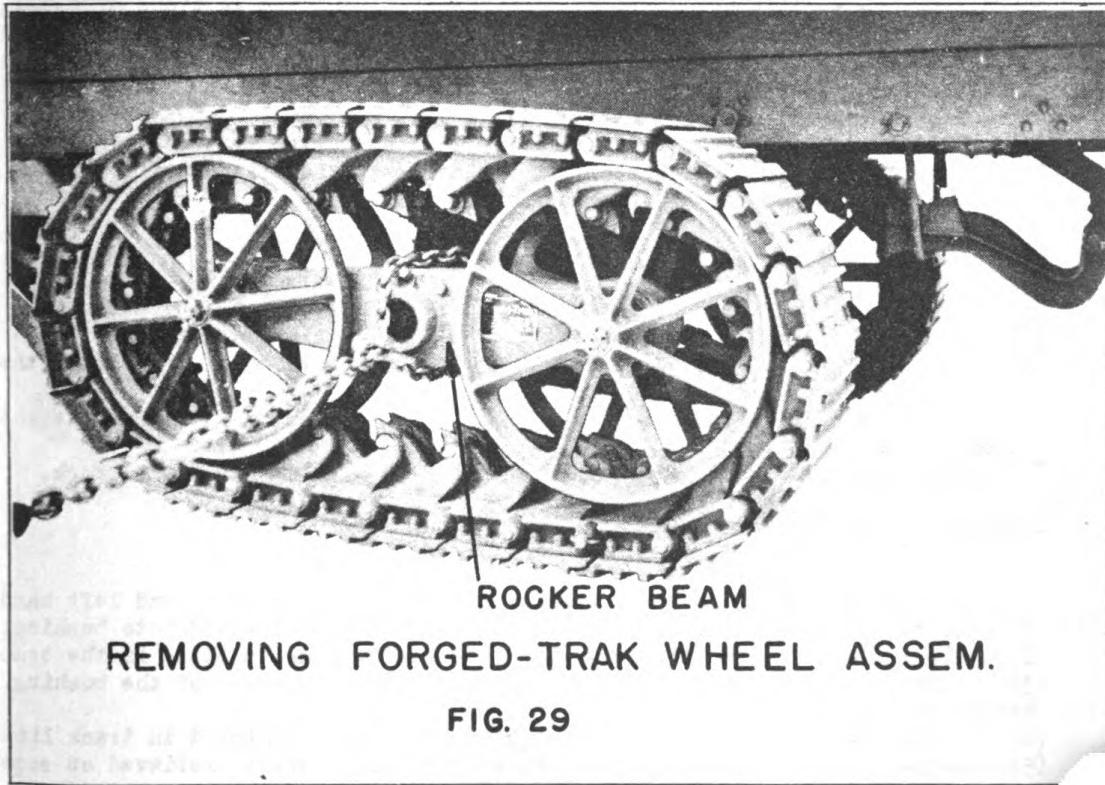
- (1) - Block DRAWBAR to support front end of frame.
- (2) - Put a suitable JACK under rear corner of frame and raise the FRAME sufficiently to give clearance between lower side of track wheels and rail of track links.
- (3) - Remove COTTER KEY from axle cap pin.
- (4) - Remove AXLE CAP PIN from main axle. (fig. 28)
- (5) - Remove AXLE CAP.
- (6) - Fasten chain around the center of ROCKER BEAM.
- (7) - Slide the FORGED-TRAK WHEEL ASSEMBLY from the axle with tractor or truck. (fig. 29)

Note: If no unit is available for pulling the Forged-Trak Wheel Assembly from the trailer, it may be removed by prying off using crow bars under the inner edges of the track plates. Forged-Trak Wheel Assembly may also be removed by the use of an overhead crane or chain hoist mounted in a position to give side pull on the wheel assembly.

- (8) - After Forged-Trak wheel assembly is removed, drive out MASTER TRACK PIN with back out punch, drift pin and sledge. (fig. 23)
- (9) - Roll Forged-Trak WHEEL ASSEMBLY forward until track uncouples and lays flat.
- (10) - Roll ROCKER BEAM AND TRACK WHEEL ASSEMBLY from track assembly.



REMOVING AXLE CAP PIN & AXLE CAP
FIG. 28



REMOVING FORGED-TRAK WHEEL ASSEM.

FIG. 29

28. SHOP MAINTENANCE AND REPAIR OF FORGED-TRAK TRACK 1. Track Link Replacement

Tools: Chain hoist or overhead crane Cutting torch
18 pound sledge 7/8" drift pin, 15" long
7/8" offset socket wrench 15/16" open end wrench
1" back out punch

- a. Removal - (1) - Fasten chain hoist to one END LINK of track assembly.
(2) - Hoist end of track up until LINK to be replaced is in a vertical position. (fig. 30)
(3) - Remove track plate bolts on link to be removed by holding tapered NUTS with open end wrench and turning track plate BOLTS with socket wrench.
(4) - Lower end of TRACK.
(5) - With cutting torch burn through both right and left hand TRACK SHOE BEARINGS. (fig. 31)
(6) - Drive out TRACK PIN using sledge and drift pin thus breaking the track apart.
(7) - Raise end of TRACK with chain hoist and uncouple the two sections of track.
(8) - Burn through TRACK PIN BUSHING and TRACK PIN at inside of right and left hand track shoe. (fig. 32)
(9) - Drive out ends of TRACK PIN.
(10) - Remove right and left hand TRACK SHOES. (fig. 33)
(11) - Rehitch the chain to the END LINK as in operation 2 above.
(12) - Repeat the above operations until all required links have been removed from the track assembly.

b. Installation

Chain hoist Cutting torch
Sledge 15/16" open end wrench
7/8" offset socket wrench

- (1) - With chain hoist fastened to the end link of one section of track, raise the section until in a vertical position.
(2) - Hook the lock pin of the end link of the section of track suspended by the hoist into the hooks of the end link of the adjacent section of the track. (fig.)
(3) - Lower the hoist until the two sections are laying flat and the track pin holes of the two end links are lined up.
(4) - Drive in replacement track pin thus coupling the two sections of track.
(5) - Repeat the above operations until all sections of track have been coupled.
(6) - Install the track plates on replacement links that are to be inserted in the track.
(7) - Insert spacer collars in track. (fig. 14)
(8) - Place track link unit in track (fig. 15), and drive in track pin.
(9) - Repeat the process of installing replacement track links until all required links are installed in the track assembly.

2. Lock Pin Replacement

Tools: Chain hoist 18 pound sledge
Cutting torch

- a. Removal - (1) - Fasten chain hoist to END LINK of track assembly.
(2) - Raise the end of the TRACK until the pressure between the HOOKS and the LOCK PIN to be removed is relieved.
(3) - With the cutting torch, cut LOCK PIN in two places just inside of right and left hand track shoes.
(4) - Push ends of LOCK PIN through track link boss and remove from track.

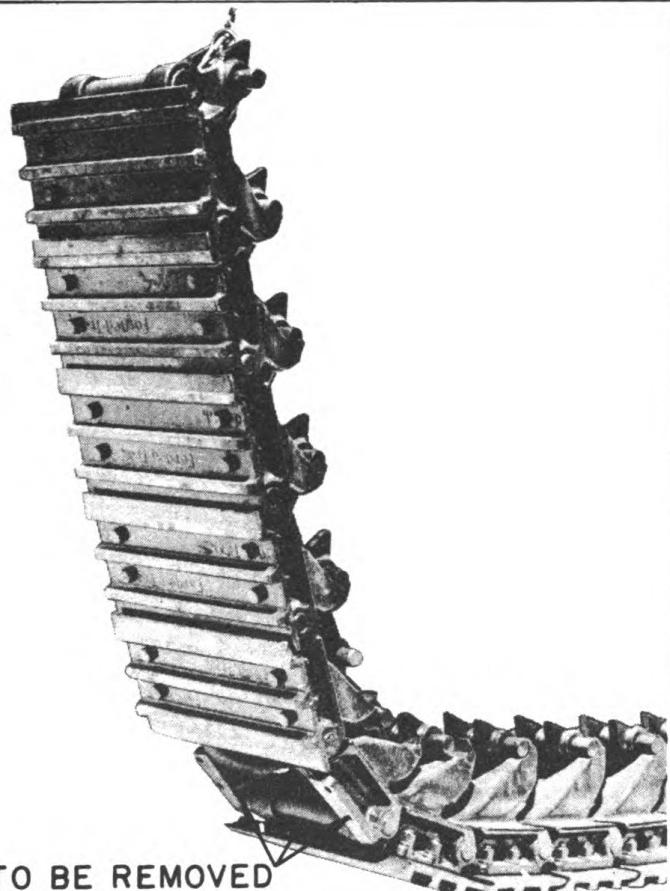
b. Installation

Chain hoist 18 pound sledge
Cutting torch

- (1) - Place replacement lock pin bushing in place between right and left hand track shoes; enter end of replacement lock pin through link boss and into bushing.
(2) - Tap end of pin with sledge to hold pin and bushing in place in the track.
(3) - With torch heat a strip about $\frac{1}{2}$ " wide across the length of the bushing to a cherry red.
(4) - Drive replacement lock pin through bushing until centered in track link.
(5) - Raise the track with the chain hoist until pressure is relieved on second lock pin to be replaced.
(6) - Repeat the above procedure until all of the required lock pins have been installed in the track assembly.

Original from

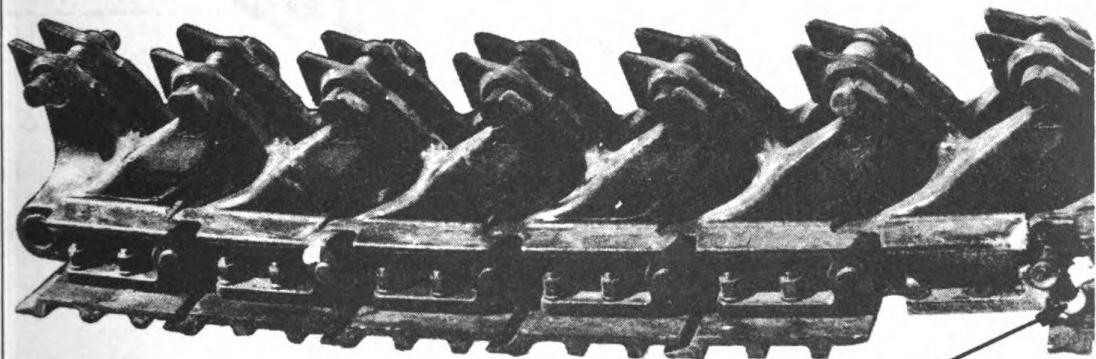
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LINK UNIT TO BE REMOVED

RAISING END OF TRACK

FIG. 30



TRACK SHOE BEARING

SEPARATING TRACK BY BURNING
THROUGH BEARING

FIG. 31

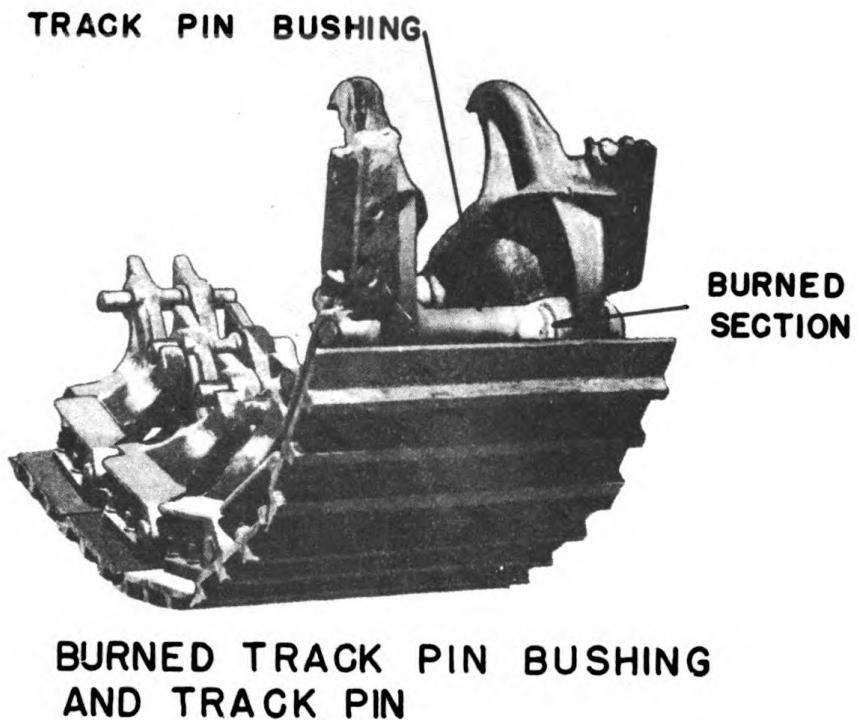


FIG. 32

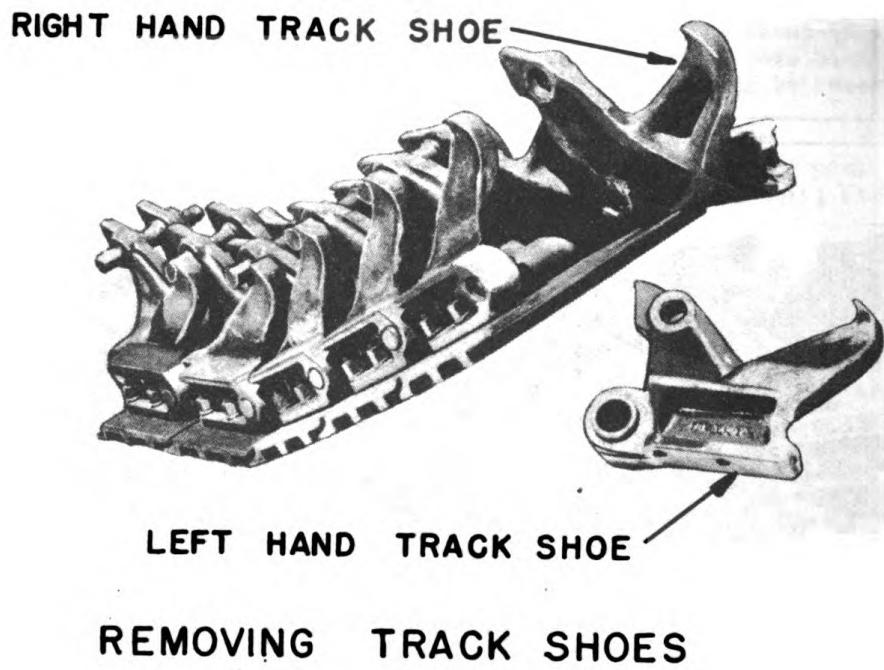


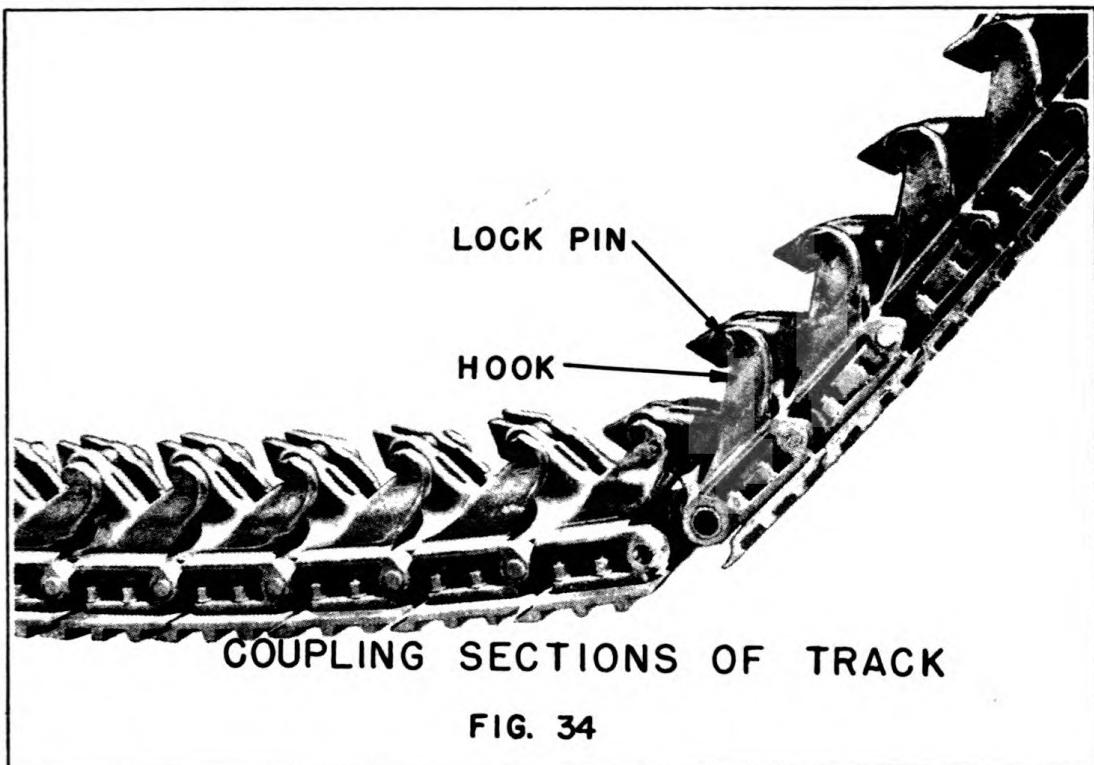
FIG. 33

29. INSTALL FORGED-TRAK TRACK ASSEMBLY

Tools: 1" bar, 3' long

18 pound sledge

- (1) - Place rocker beam and track wheel assembly on rails of track assembly.
- (2) - Insert a 1" bar in track pin hole of end track link.
- (3) - Roll track forward over rocker beam and wheel assembly. (fig. 16)
- (4) - Hook the hooks of the upper track link over the lock pin of the link in front. (fig. 17)
- (5) - Roll wheel assembly back until track comes together and track pin holes line up. (fig. 18 and fig. 19)
- (6) - Drive in track pin thus coupling the track. (fig. 20)



30. DISASSEMBLY OF ROCKER BEAM AND TRACK WHEEL ASSEMBLY

Tools: Pliers

Sledge

Wheel puller

10" screwdriver

$\frac{1}{2}$ " punch

Machinist hammer

3/4" open end wrench

2 - 3/4" hexagon wheel wrench

(1) - Block under each end of ROCKER BEAM between track wheels as illustrated in fig. 35.

(2) - Remove wheel retaining nut COTTER KEYS.

(3) - Remove wheel retaining NUTS using hexagon wheel wrench.

(4) - Put WHEEL PULLER on end of spindle and tighten with wheel wrench.

(5) - Hit two or three sharp blows on WHEEL PULLER with sledge hammer until TRACK WHEEL loosens on spindle. (fig. 35)

(6) - Remove wheel puller and TRACK WHEEL from spindle. (fig. 36)

(7) - Repeat the above operations and remove all TRACK WHEELS from spindles.

(8) - Place the ROCKER BEAM horizontally on suitable support with spindles vertical as illustrated in fig. 37.

(9) - Remove cap screw LOCK WIRE and bearing cage CAP SCREWS. (fig. 37)

(10) - Turn ROCKER BEAM ASSEMBLY over on supports.

(11) - Drive out SPINDLE and BEARINGS as illustrated in fig. 38.

(12) - Place end of spindle on a solid block and tap BEARING CAGE from spindle with hammer and punch. (fig. 39)

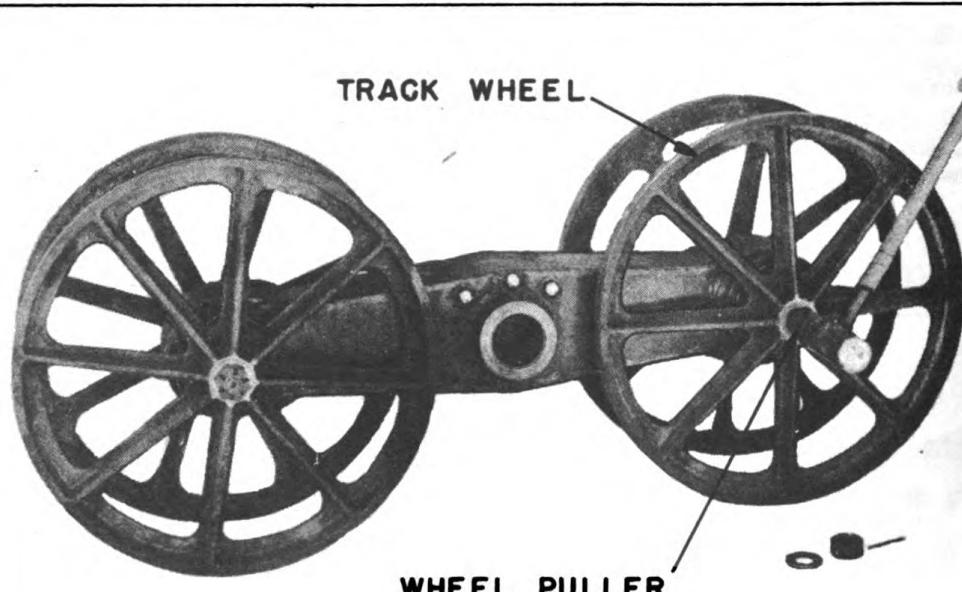
(13) - Repeat operations 9, 10 and 11 and remove opposite SPINDLE.

(14) - Remove two upper BEARING CAGES by tapping screwdriver in between face of cage and face of rocker beam and prying cage up from rocker beam.

(15) - Remove BEARINGS from spindle with a suitable press.

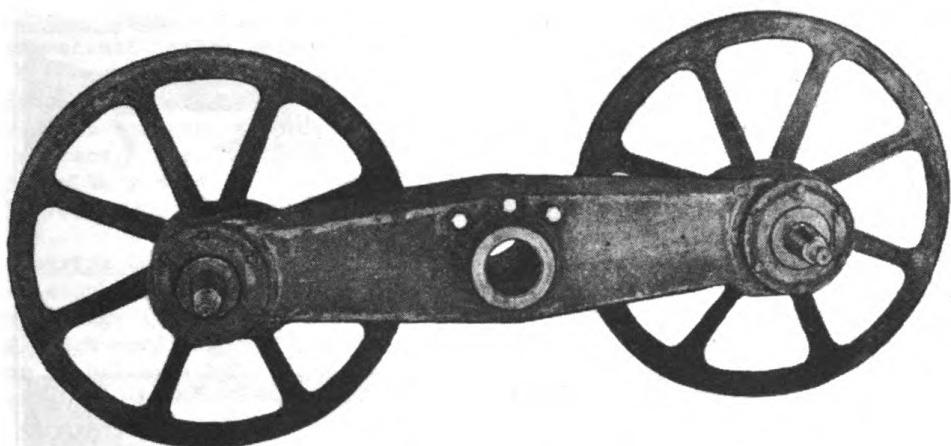
(16) - Drive OIL SEAL from bearing cage with screwdriver and hammer.

(17) - Remove BUSHING from center of rocker beam. This bushing may be removed by pressing it out of the rocker beam.



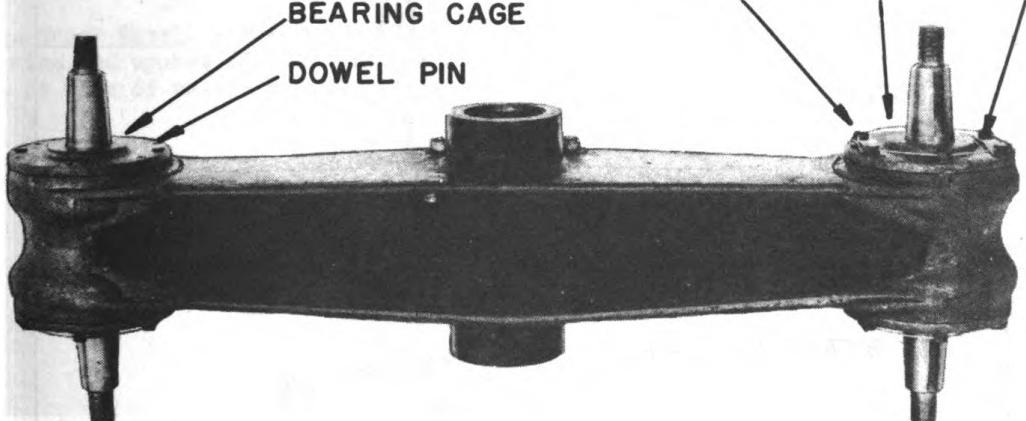
LOOSENING TRACK WHEEL

FIG. 35



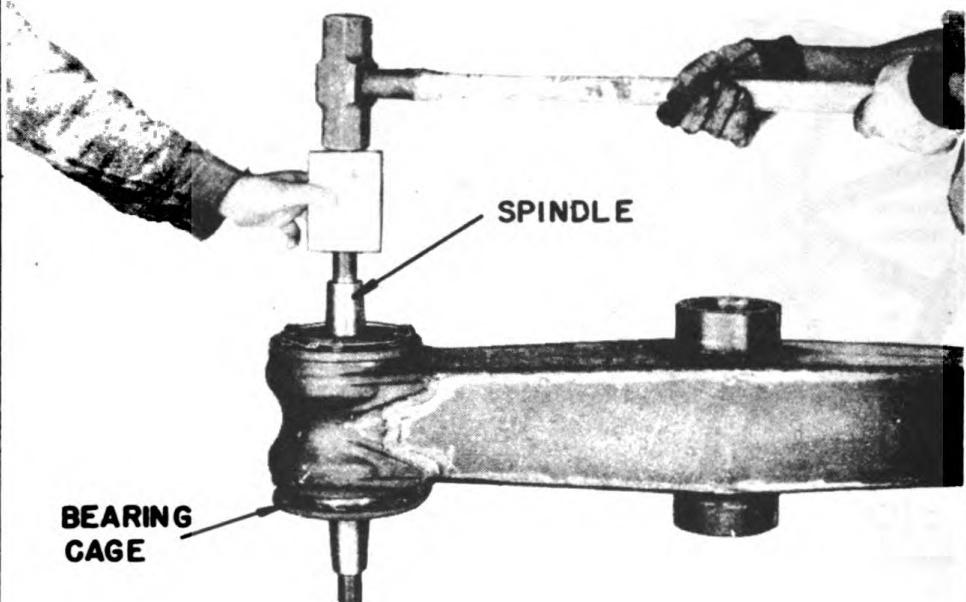
ROCKER BEAM ASSEMBLY
(SHOWING TWO TRACK WHEELS REMOVED)

FIG. 36



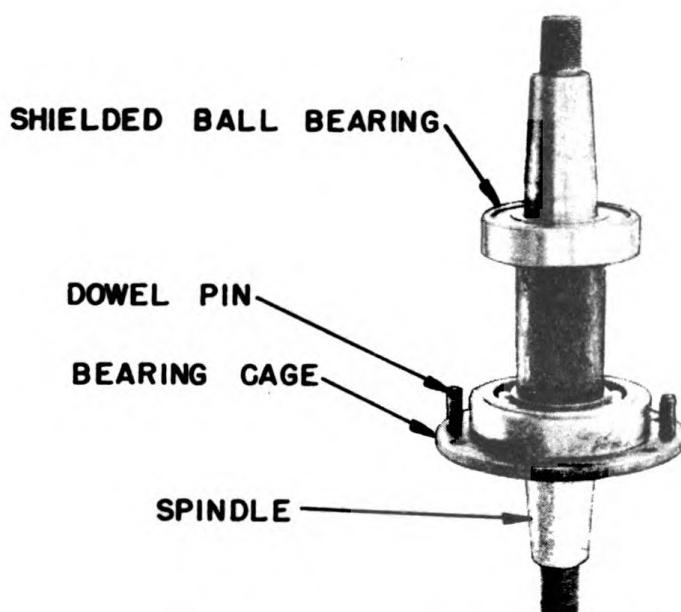
ROCKER BEAM READY FOR DISASSEMBLY

FIG. 37



REMOVING SPINDLE & BEARINGS

FIG. 38



POSITION OF SPINDLE FOR
BEARING CAGE REMOVAL

FIG. 39

31. MAINTENANCE AND REPAIR OF ROCKER BEAM AND TRACK WHEEL ASSEMBLY.

a. Rocker Beam. - Examine rocker beam for fractures and reweld as required.

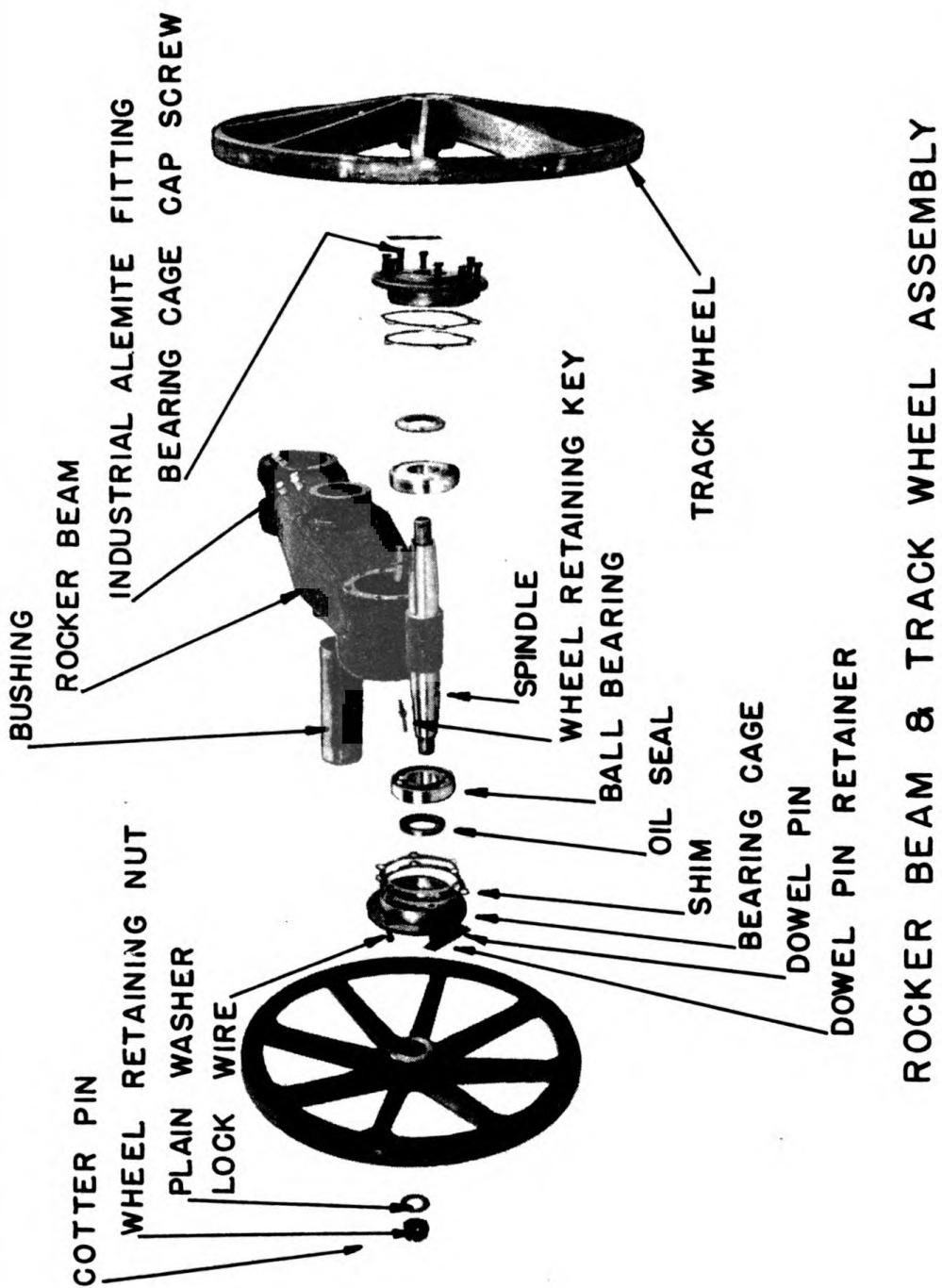
When reconditioning broken, twisted or badly fractured rocker beam, make certain the rocker beam is straight and is held in alignment while welding. Correct alignment of reconditioned rocker beams is essential. Check rocker beam bushing. Worn bushings should be replaced or rotated through 180° to obtain new wearing surface. When turning or rotating bushing, be sure to align grease hole in bushing with grease line in top of rocker beam. Examine grease fittings and grease lines.

b. Bearing Cage. - Check bearing cage flanges for fit in rocker beam. Bearing cages should be a light drive fit in the rocker beam. Check inner and outer surfaces of cage flange for burrs, nicks, and galled or scored condition. Correct any rough condition of bearing cage flange with file or emery cloth. Check condition of oil seal seat. Oil seals that do not fit tightly in the cage should be center punched in four or five places around the seal after installation in the cage to eliminate possibility of any rotational movement of seal in seat of bearing cage.

c. Spindles. - Check spindles for indications of fatigue cracks. Fatigue cracks in spindles may be corrected by welding. Check keyways and tapered end of spindles for indication of wear between spindle and track wheel. Indications of excessive wear on spindles necessitates replacement.

d. Spindle Bearings. - Inspection of bearings is best performed after the bearing is washed, dried and dipped in light oil. The condition is principally determined by the surface condition of balls and races, the axial looseness and the radial looseness. The surface condition can be determined by visual inspection. Bearings that show indications of surface pits or corrosion on the balls should not be used. Axial looseness provides sufficient information to judge the amount of bearing wear, and an experienced inspector can determine whether worn bearings may be reused. Bearing races should be checked for galled and scored condition. The inspector must decide whether the bearing is fit for further use.

e. Track Wheel. - Track wheels with badly worn hubs should be replaced. Check rims and spokes of track wheels for fractures. Small cracks or breaks in spokes or rims of wheels may be repaired by welding.



ROCKER BEAM & TRACK WHEEL ASSEMBLY

FIG. 40

32. ASSEMBLY OF ROCKER BEAM AND TRACK WHEEL ASSEMBLY (fig. 40)

Tools:	Pliers	Sledge
	1/8" punch	10" screwdriver
	Machinist hammer	3/4" open end wrench
	2-3/4" hexagon wheel wrench	

- (1) - Install rocker beam bushing in center hub by the use of a suitable press.
- (2) - Install oil seals in bearing cages having feathered edge of seals toward the outside. (fig. 27)
- (3) - Place rocker beam horizontally on a suitable bench with machined sides facing up and extending over the edge of the bench.
- (4) - Install the two upper bearing cages in rocker beam aligning dowel pin holes in cage with dowel pin holes in rocker beam.
- (5) - Drive in dowel pins.
- (6) - Place dowel pin locks over dowel pins.
- (7) - Insert bearing cage cap screws, tighten and install cap screw lock wire.
- (8) - Turn rocker beam over with opposite side facing up.
- (9) - Mount bearings on spindle. (fig. 41)
- (10) - Insert one end of spindle through bearing cage that has been installed, and by tapping the end of the spindle with a lead hammer, drive the assembly in until the lower bearing is seated in the cage.
- (11) - Place shims over spindle and put in place on machined face of rocker beam.
- (12) - Place upper bearing cage with oil seal installed over upper end of spindle.
- (13) - Tap bearing cage to place in rocker beam.
- (14) - Drive in dowel pins.
- (15) - Place dowel pin locks in place, install bearing cage cap screws, tighten and install cap screw lock wire.
- (16) - Check by turning spindle to see that it is free to rotate. If the spindle does not rotate freely, it is required to remove the upper bearing cage and install additional shims.
- (17) - Follow the above procedure (operations 8 to 15 inclusive) and assemble the opposite spindle in the rocker beam in a similar manner.
- (18) - Place the rocker beam on blocks with spindle in a horizontal position. Put track wheel on the spindle aligning keyway in hub of wheel with keyway in spindle.
- (19) - Drive in wheel retaining key having beveled end of key toward rocker beam and beveled surface of key next to the spindle.
- (20) - Put on wheel retaining washer, nut, and tighten the nut extremely tight using sledge on hexagon wheel wrench.
- (21) - Insert cotter key through wheel retaining nut.
- (22) - Install the other three track wheels of the assembly in a similar manner.
- (23) - Install rocker beam and track wheel assembly on track assembly and couple track. (See paragraph 29)

33. INSTALLATION OF FORGED-TRAK WHEEL ASSEMBLY. -

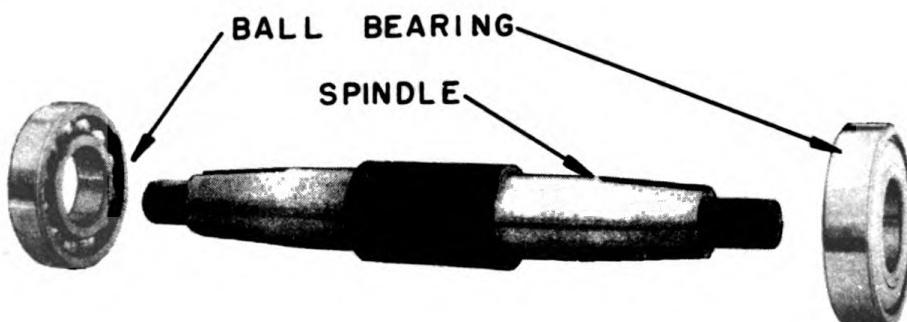
(1) - Roll the Forged-Trak wheel assembly until the bore of the rocker beam is in line with the trailer axle.

(2) - Place one end of an oak 4" x 4" about 6' long against the center of the rocker beam.

(3) - Back a truck or other suitable unit against the outer end of the 4" x 4" and slide the wheel assembly in place on the axle.

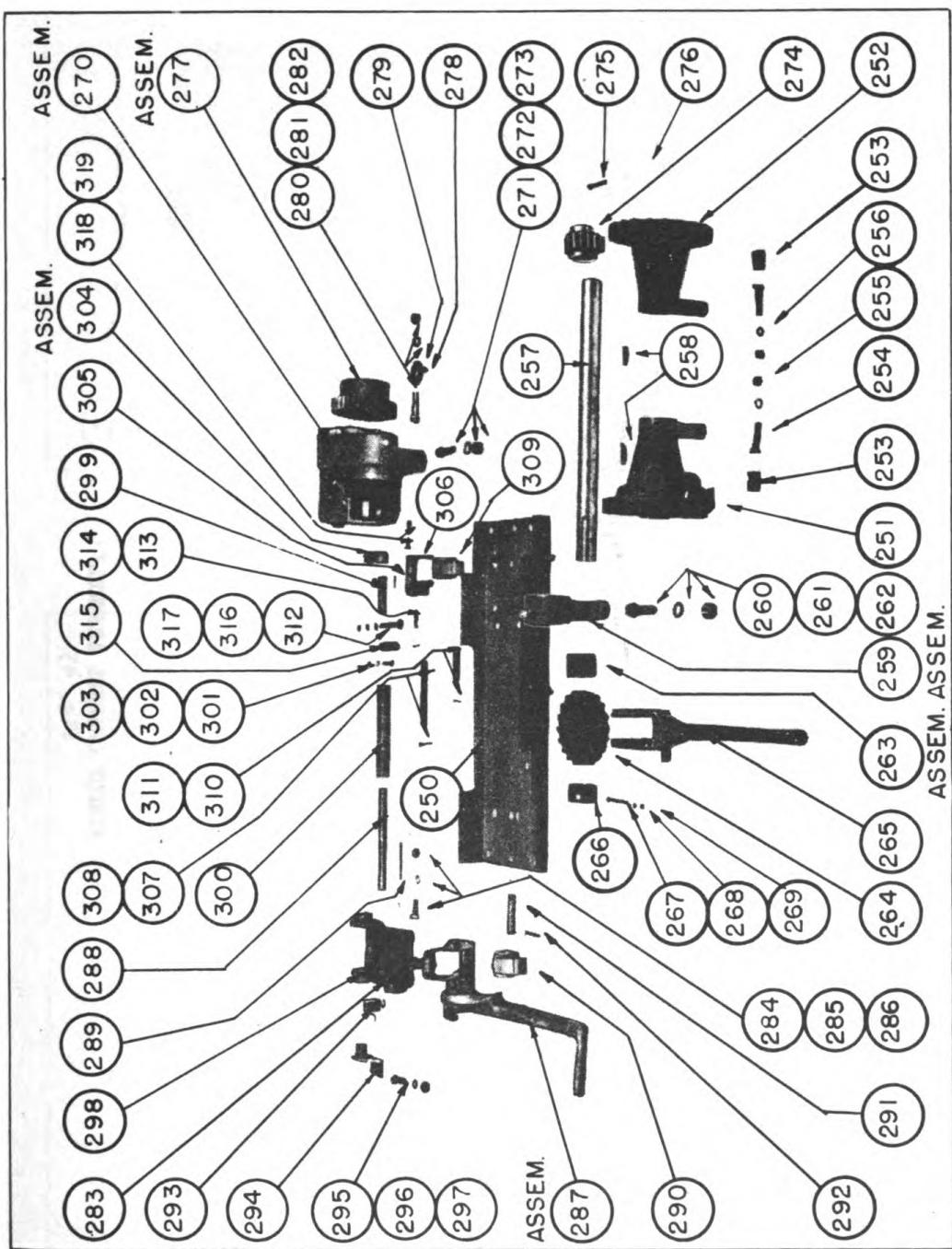
Note: If a truck or suitable unit is not available to push the wheel on, it may be installed by the use of bars.

- (4) - Put axle cap on end of axle.
- (5) - Insert axle cap pin and cotter key.

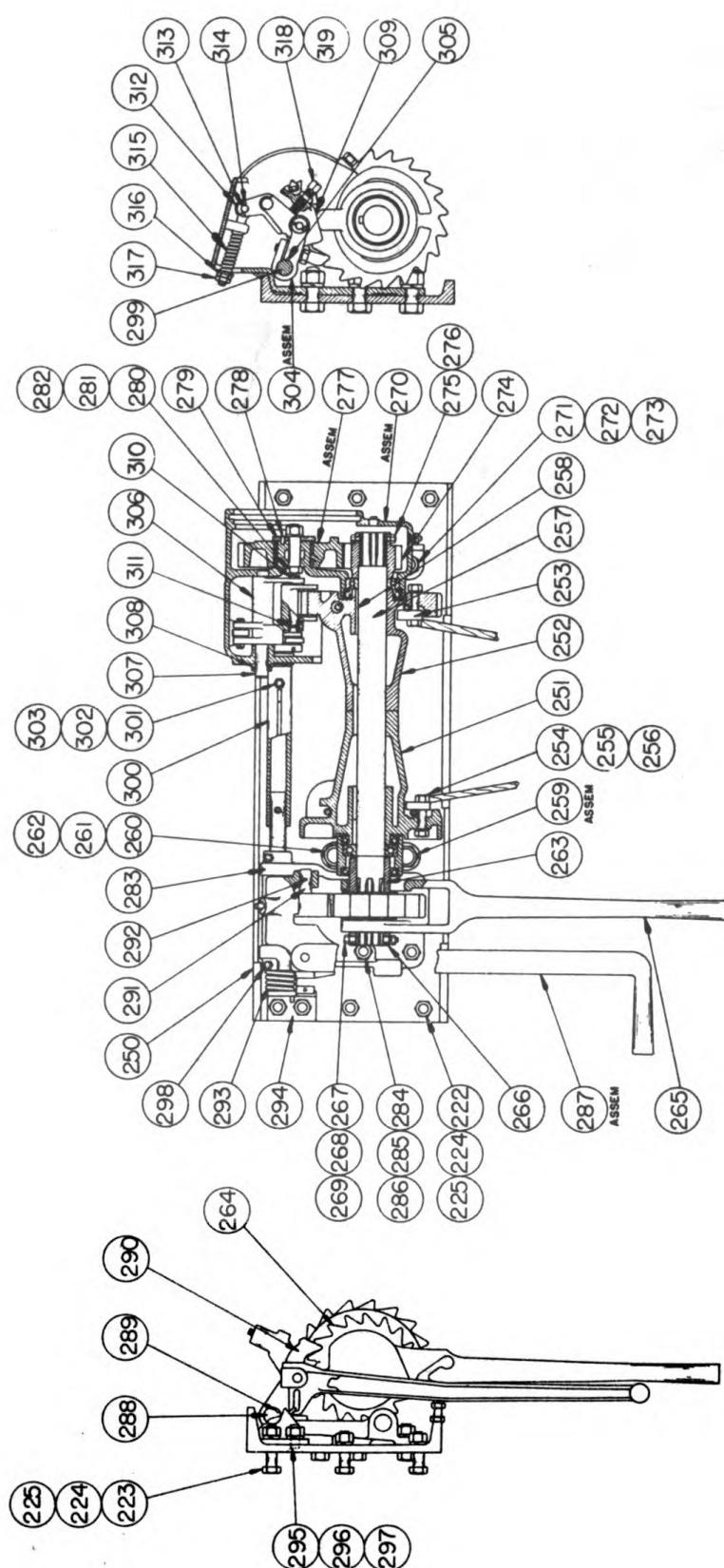


SPINDLE & BEARINGS

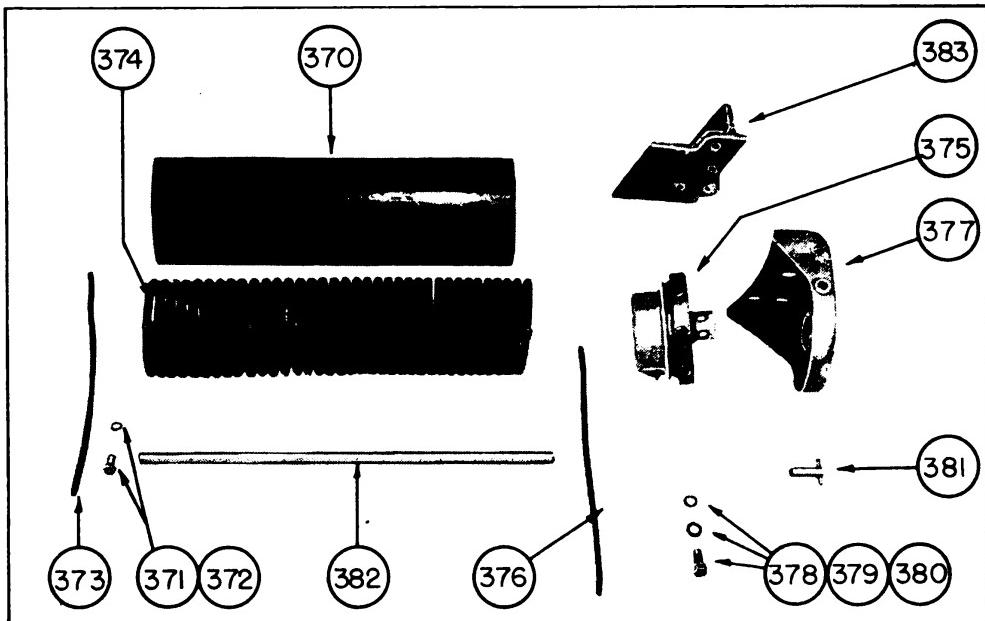
FIG. 41



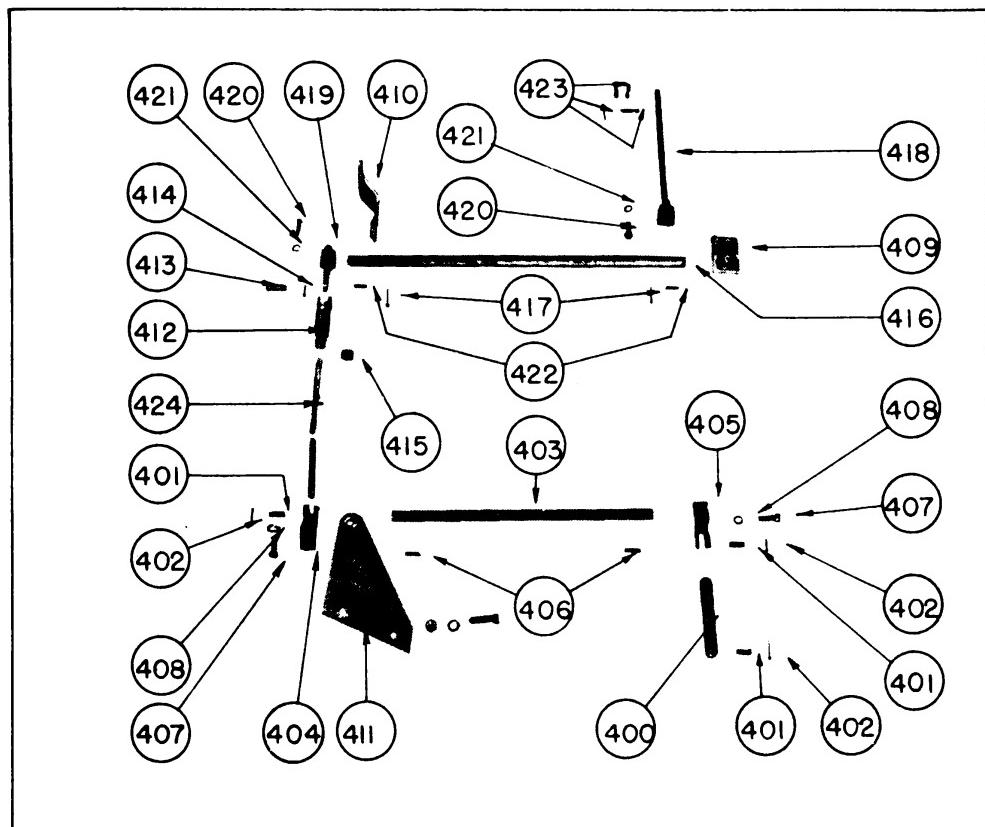
WINDUP CHANNEL ASSEMBLY (PARTS)
Fig. 42



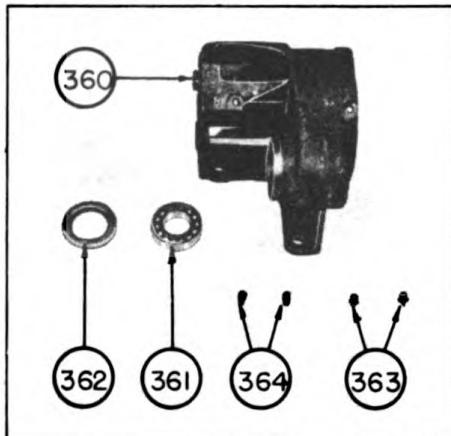
WINDUP CHANNEL ASSEMBLY
FIG. 43



SPRING HOUSING ASSEMBLY (PARTS)
Fig. 44



TRACTOR DUMPING CONTROL (PARTS)
Fig. 45



GEAR HOUSING ASSEMBLY (PARTS)
Fig. 46

Section VII

SEMI-AUTOMATIC SPRING WINDUP

Description	Paragraph
Trouble Shooting	34
Adjustments	35
Torsion Spring Replacement	36
Windup Removal	37
Disassembly	38
Maintenance and Inspection	39
Assembly	40
Installation	41
	42

34. **DESCRIPTION a. Construction.** - The semi-automatic spring windup is equipped with a cable drum made up of two drum halves for winding door cable. The right hand drum half is provided with a ratchet for holding the doors open when the load is dumped. Cable ends are held to each end of the cable drum by cable clamps. Cable drums are keyed to the drum shaft. The cable drum shaft is mounted on ball bearings.

A splined ratchet for holding the load is fitting on the left hand end of the cable drum shaft. A lever for hand winding of the doors is provided on the drum shaft over the load ratchet. A trip mechanism, which carries the trip lever dog for holding the load, is mounted on the trip lever bracket and provides for control of the doors by rear or front trip lever.

The right hand end of the drum shaft is splined and a pinion is fitted on the shaft. This pinion engages a gear mounted in the gear housing, which is bolted to the windup channel. The windup is equipped with a torsion spring for automatic winding of the doors.

b. Operation. - The doors may be controlled by the rear trip lever or by the front trip lever which is provided for door control by the tractor operator.

When the doors are up and it is desired to dump the loaded trailer, the trip lever should be pulled as far as possible either by the tractor operator or by manual operation of the rear trip lever 387. When trip lever 387 is pulled out, trip lever dog 290 toggles under due to pressure from spinning ratchet 264 as cable drums 252 and 258 unwind. When trip lever 387 is tripped and the doors are dropped, trip lever dog 309 engages ratchet of cable drum 252 and holds the doors open. As the cable unwinds from the cable drum, tension is in-

creased on torsion spring 374 and the spring is held under increased tension by trip lever dog 309 on ratchet of cable drum 252. After the load has been dumped and it is desired to close the doors, the trip lever is again operated either by the tractor operator or by manual operation of the rear trip lever. When the doors are open and the trip lever is pulled to close doors, pressure from torsion spring 374 turns cable drum in winding direction and closes the doors. The pressure from the ratchet of the cable drum 252 causes trip lever dog 309 to toggle under, and after the doors are up they will be held in closed position by engagement of trip lever dog 292 on ratchet 264.

When handling sticky materials which do not clean well from the doors, the torsion spring will not wind the doors completely tight. If it is desired to wind the doors up tight under these conditions, it is necessary to wind two or three strokes with the hand winding lever. It is desirable to keep doors free of sticking material as much as possible to eliminate necessity of hand winding of doors and overstressing of torsion spring.

For efficient performance of the windup, and proper control of the doors, it is required to keep door sheaves operating freely and keep the doors in alignment.

35. TROUBLE SHOOTING

<u>Symptom and Probable Cause</u>	<u>Probable Remedy</u>
<u>Doors fail to windup.</u> Broken or improperly adjusted torsion spring.	Replace or adjust torsion spring.
Excessive amount of material on doors.	Clean doors.
Broken door cable.	Replace door cable.
Obstruction between doors.	Replace torsion spring tension and remove obstruction.
Cable ends pulled from cable drum.	Install cable on drum and tighten clamps.
Misalignment of doors.	Recondition doors.
Broken sheave bracket.	Replace sheave bracket.
<u>Doors will not hold load.</u> Improper setting of trip lever adjusting screw.	Adjust trip lever adjusting screw.
Broken plunger spring.	Replace plunger spring.
Sheared drum key.	Replace drum key.
Bent or broken drum shaft.	Replace drum shaft.
<u>Doors will not stay open.</u> Improper adjustment of trip lever dog set screw.	Adjust trip lever dog set screw.

CAUTION: DO NOT GO INSIDE TRAILER WITH DOORS OPEN WITHOUT FIRST BLOCKING DOORS OPEN FOR SAFETY OR RELEASING TENSION ON TORSION SPRING.

36. ADJUSTMENTS: - Windup adjustments should be checked periodically and kept in adjustment to obtain the maximum in efficient performance.

a. Torsion spring adjustment. (fig. 43 and fig. 44)

- (1) - Wind the Doors up tight before proceeding with adjustment of torsion spring.
- (2) - Remove LOCK PIN 381 from spring bracket 377 and insert spring adjusting rod through hole in hub of latch collar 375.
- (3) - Turn latch COLLAR clockwise with adjusting bar one-half to three-fourths turn.
- (4) - Insert LOCK PIN through bracket 377 and lock LATCH COLLAR 375 in place.

Caution: Do not adjust initial spring tension on torsion spring greater than

one turn of latch collar 375. If initial spring tension of one turn is insufficient to wind doors up tight, it is required to complete winding manually with hand winding lever.

b. Load dog adjustments.

(1) - Adjust stop screw on trip lever so that trip lever dog rests squarely on face of ratchet tooth.

(2) - Tighten jam nut against back of trip lever.

Note: If trip lever dog does not hold loosen jam nut and turn stop screw in a little at a time until adjustment is made. When too great a pressure is required for pulling trip lever when dumping load, loosen jam nut and turn stop screw out to give decreased pull for operating trip lever.

c. Trip lever dog adjustment.

(1) - Adjust set screw in rear side of gear housing so that trip lever dog 309 will hold pressure of torsion spring when doors are open.

Note: This adjustment may best be made by screwing set screw all the way in and then applying pressure to the load ratchet by use of the hand lever. Then back out set screw a little at a time until the toggle cannot be broken by pressure on the winding lever. Then tighten jam nut against gear housing.

d. Latch link spring adjustment.

(1) - Adjust tension on latch link return spring 315, so there is just sufficient tension on spring to return latch to ratchet.

37. TORSION SPRING REPLACEMENT. (fig. 43 and fig. 44)

Tools: 2 - 15/16" open end wrenches Pliers
Frame adjusting bar

a. Removal. -

- (1) - Close doors with hand winding lever.
- (2) - Insert adjusting bar, 384 through hole in hub of latch collar 375 and relieve pressure on lock pin 381.
- (3) - Remove LOCK PIN 381 and release tension on torsion spring 374.
- (4) - Remove CAP SCREWS 378 that bolt spring bracket 377 to spring bracket support 383.
- (5) - Remove SPRING BRACKET 377 from spring bracket support 383.
- (6) - Slip LATCH COLLAR 375 from end of spring housing 370.
- (7) - Remove SPRING 374 from spring housing 370.

b. Installation. -

- (1) - Slide replacement spring 374 in spring housing 370 and insert end anchor of spring into slot provided in gear assembly 277.
- (2) - Install felt washer 376 in slot of latch collar 375.
- (3) - Enter latch collar into end of spring housing 370 and enter end anchor of spring into slot provided in latch collar.
- (4) - Replace spring bracket 377 and bolt to spring bracket support 383.
- (5) - Adjust tension of torsion spring in accordance with instructions in paragraph 36.

38. WINDUP REMOVAL (figs. 42, 43, 44 and 45)

Tools: 2 - 15/16" open end wrenches 3/4" open end wrench
3/4" open end wrench Machinist hammer
Pliers Screwdriver

- (1) - Close DOORS tight with hand winding lever.
- (2) - Insert adjusting bar 382 through hole in hub of latch collar 375 and relieve pressure on lock pin 381.

- (3) - Remove LOCK PIN 381 and release tension on torsion SPRING 374.
- (4) - Pull trip lever 287 and drop doors of trailer.
- (5) - Remove cap screws 254 and cable clamps 253 and pull ends of cable from cable drum halves 258 and 252.
- (6) - Remove frame BRACKET SUPPORT 383 from trailer body.
- (7) - Remove latch collar 375 from end of spring housing 370.
- (8) - Remove SPRING 374 from spring housing 370.
- (9) - Remove CAP SCREW 371 from gear housing assembly 270.
- (10) - Remove SPRING HOUSING 370.
- (11) - Remove COTTER KEY and PIN 401 from lever 404. (fig. 45)
- (12) - Remove CAP SCREWS and rear shaft BRACKET 411 from trailer. (fig. 45)
- (13) - Loosen cap screw in roller trip LEVER 405 and remove rear SHAFT 416 from windup. (fig. 45)
- (14) - Fasten chain around cable drum and hook CHAIN HOIST or overhead crane to support WINDUP CHANNEL ASSEMBLY.
- (15) - Remove CAP SCREWS that hold windup channel 250 to trailer body.
- (16) - Lower chain hoist and remove WINDUP CHANNEL ASSEMBLY from trailer.

39. DISASSEMBLY

Tools:	2 - 1-1/4" open end wrenches	2 - $\frac{1}{2}$ " open end wrenches
	12" screwdriver	8 pound sledge hammer
	3/8" open end wrench	Machinist hammer
	1-1/16" open end wrench	2 - 15/16" open end wrenches

- (1) - Remove CAP SCREWS 295 that hold torsion spring bracket 294 to windup channel.
- (2) - Remove torsion spring BRACKET 294 and torsion SPRING 293 from windup channel.
- (3) - Remove CAP SCREW in trip lever SHAFT 288.
- (4) - Pull trip lever SHAFT 288 from trip lever bracket 283.
- (5) - Remove LINK PIN 401 from trip lever assembly 287.
- (6) - Remove TRIP LEVER ASSEMBLY 287, from windup channel.
- (7) - Remove BOLTS 284 and trip lever BRACKET 283 from windup channel.
- (8) - Remove CAP SCREW 267 and retaining COLLAR 266 from end of drum shaft 257
- (9) - Drive RATCHET 264 from end of drum shaft 257 and remove hand winding LEVER 265.
- (10) - Remove CAP SCREWS 260 that hold bearing assembly 259 to windup channel.
- (11) - Remove CAP SCREW 280 and RETAINING WASHER 279 from gear assembly 277.
- (12) - Slip GEAR ASSEMBLY 277 from gear housing assembly 270.
- (13) - Remove CAP SCREW 275 from pinion 274.
- (14) - Remove CAP SCREWS that hold gear housing assembly 270 to windup channel.
- (15) - Drive gear HOUSING ASSEMBLY 270 and PINION 274 from end of drum shaft

257.

- (16) - Drive DRUM SHAFT 257 out of cable drums 252 and 258.
- (17) - Remove BEARING BRACKET ASSEMBLY 259 from end of drum shaft by tapping inner surface of bearing bracket.
- (18) - Remove NUT and JAM NUT from spring adjusting eyebolt 312 in gear housing assembly 270.
- (19) - Pull coupling 300 and roller trip lever SHAFT 299 from gear housing assembly 270.
- (20) - Loosen CAP SCREW in LEVER 304.
- (21) - Remove COTTER KEY and roller trip lever SHAFT 307 from lever 304.
- (22) - Remove COTTER PIN and LATCH LINK PIN 310 from gear housing assembly 270.
- (23) - Remove LATCH LINK 306 from gear housing assembly 270.

- 40. MAINTENANCE AND INSPECTION. - Examine bushing in gear assembly 277 and replace if necessary. Check gear teeth on gear 331 and pinion 274. Examine bearing 361 and check oil seal 352. Check gear housing 360 for breaks or fractures and recondition by welding or replace if necessary. Examine trip lever dogs, links, link pins and levers and replace all badly worn parts. Examine trip lever bracket for fractures in the casting and recondition by welding or replace as necessary. Check rear trip lever 287 for wear or breaks and recondition or replace as required. Examine bearing bracket 356 for fractures and check bearing 358 and oil seal 359.

f necessary. Examine splined ends and keyways of drum shaft 257. Check cable drum halves for wear in keyways and for fractures and worn condition. Check gear housing felt washer and latch collar felt washer and replace with new washers if required. Examine latch collar 375 for wear and recondition or replace as necessary. Check frame bracket 377 and frame bracket support 383 for fractures and recondition as required. Check torsion spring 374 and replace if necessary. Examine rear cross shaft, levers, connecting pins, and all linkage for front door control and replace parts as required.

41. ASSEMBLY (fig. 46)

- (1) - Install bearing 361 and oil seal 362 in gear housing 360.
- (2) - Install grease fittings 363 and pipe plugs 264 in gear housing 360.
- (3) - Put roller trip lever assembly 304 in gear housing 270, insert key 305 and shaft 299.
- (4) - Tighten cap screw 312 in trip lever 304.
- (5) - Install trip lever dog 309 in latch link 306 and insert pin 310.
- (6) - Place latch link 306 in place in gear housing assembly 270 and install latch link pin 307 and cotter key 308.
- (7) - Bolt gear housing assembly to windup channel 250.
- (8) - Mount cable drum halves 252 and 253 on cable drum shaft 257.
- (9) - Enter drum shaft 257 through bearing in gear housing assembly 270 and into pinion 274 aligning hole in pinion with hole in drum shaft.
- (10) - Insert retaining cap screw 275 through pinion and tighten.
- (11) - Install bearing bracket assembly 259 on drum shaft and drive against cable drum.
- (12) - Bolt bearing bracket assembly 259 to windup channel 250.
- (13) - Bolt trip lever bracket 283 to windup channel 250.
- (14) - Install coupling 300 on trip lever shaft 299.
- (15) - Install spacer assembly 263 on drum shaft 257.
- (16) - Place winding lever 265 over ratchet 264.
- (17) - Slip winding lever and ratchet over splined end of drum shaft and push to place against spacer assembly 263.
- (18) - Install retainer collar 266 on end of drum shaft and insert cap screw 267 and tighten.
- (19) - Put trip lever assembly 287 in place in trip lever bracket 283 and insert trip lever shaft 288.
- (20) - Install retaining cap screws 307 in coupling 300.
- (21) - Install torsion spring 293 on end of trip lever shaft 288 and mount torsion spring bracket 294 to windup channel.
- (22) - Install trip lever dog 290 in trip lever assembly 287 and insert pin 291.

42. INSTALLATION. -

- (1) - Fasten chain around cable drum and hoist channel assembly in place and bolt to back of trailer.
- (2) - Mount trip lever 405 on rear shaft 403 and insert end of shaft in bearing on windup channel.
- (3) - Install lever 404 and key on rear shaft 403.
- (4) - Mount bracket 411 on shaft 403 and bolt in place on body of trailer.
- (5) - Place gear assembly 277 in gear housing assembly 270 and install retainer 278 and cap screw 280.
- (6) - Insert spring housing 370 into gear housing assembly 270 and install cap screw 371.
- (7) - Install torsion spring, see paragraph 37b.

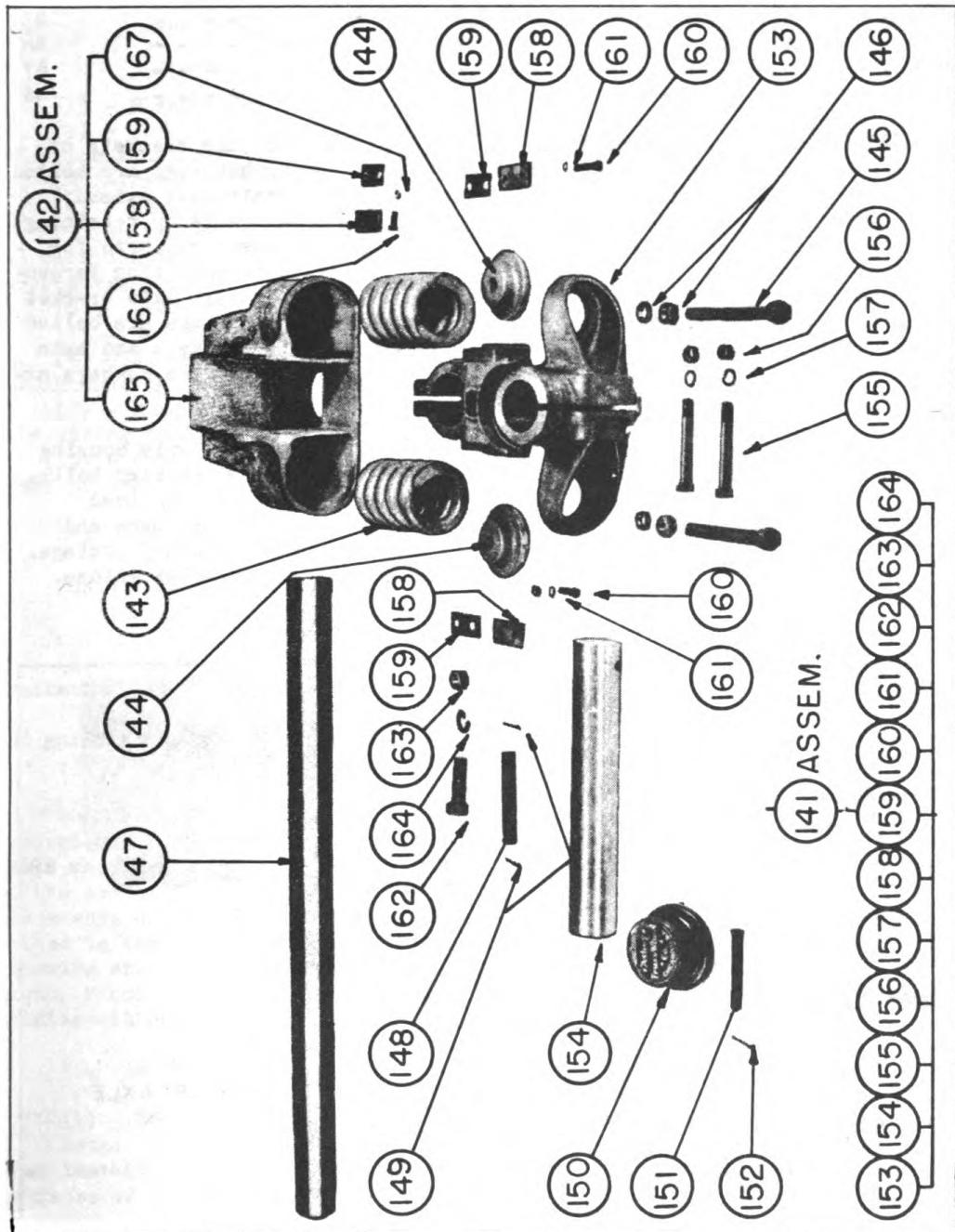


Fig. 47 SPRING MOUNTED AXLE GROUP (PARTS)

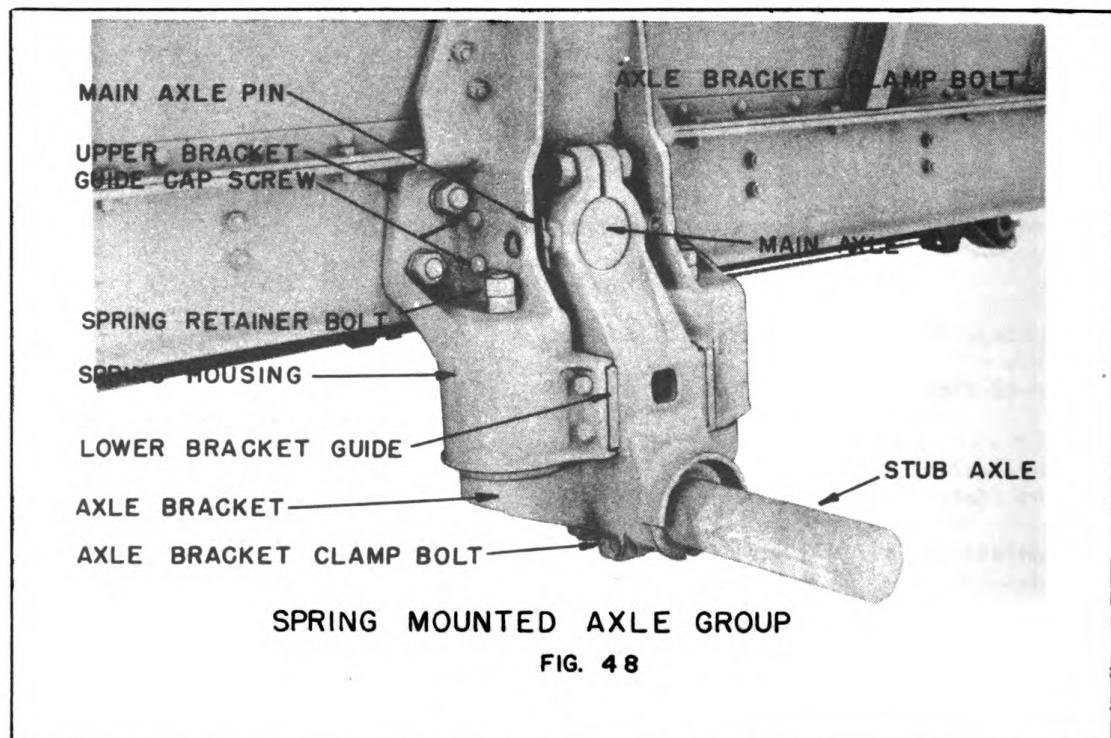
Section VIII

SPRING MOUNTED AXLE GROUP
(Figs. 47 & 48)

	Paragraph
Description - - - - -	43
Removal - - - - -	44
Disassembly - - - - -	45
Maintenance and Inspection - - - - -	46
Assembly - - - - -	47
Installation - - - - -	48

43. DESCRIPTION. - **a. Construction** - Spring housings and axle brackets of the spring mounted axle group are cast steel castings. Spring housings are bolted to each side of the trailer frame and body. The ends of the main axle extend through the spring housing. Axle brackets are held to the main axle by retaining pins and clamp bolts. Axle brackets are provided with spring seat supports for supporting the lower ends of the housing springs. Stub axles for mounting Forged-Trak Wheels are held to lower ends of axle brackets by clamp bolts. Axle bracket guides and guide shims for aligning axle brackets with spring housings are bolted to the spring housing. Inner bracket guides for aligning axle brackets and main axle are bolted to the inner surface of each axle bracket. Side frame members are slotted to provide movement of the axle.

b. Operation - During operation when the trailer is empty, the axle housing springs are held partly compressed by spring retainers and spring retainer bolts. When the trailer is loaded, the load is carried on the springs reducing load shock on the Forged-Trak Wheels. The loaded trailer floats on the springs and the axle brackets and main axle move up and down relative to the spring housings. The axle brackets are kept in alignment by guide shims and axle bracket guides.



SPRING MOUNTED AXLE GROUP ASSEMBLY
Fig. 48

44. REMOVAL

Tools: 2 - 1-5/8" open end wrenches
15/16" open end wrench
Pinch bar
1" drift pin
Machinist hammer
Track jack

2 - 1-7/8" open end wrenches
2 - 1-1/4" open end wrenches
1/8" punch
Sledge
Pliers
Suitable blocks for blocking trailer.

- (1) - Block under front of trailer FRAME.
- (2) - Jack up rear of TRAILER until pressure on track wheels is relieved, and block FRAME of trailer for safety.
- (3) - Remove FORGED-TRAK WHEELS. See paragraph 27.
- (4) - Remove upper axle bracket GUIDES 158 from spring housing 165.
- (5) - Tighten NUTS on spring retaining bolts 145, and compress HOUSING SPRINGS 143 sufficiently to obtain clearance between lower side of spring retainer 144 and upper surface of spring retainer support on axle bracket 153.
- (6) - Remove COTTER KEY and drive out main axle PIN 148.
- (7) - Loosen axle bracket clamp BOLT 162 on top of main axle 147.
- (8) - Slide axle BRACKET 153 from end of main axle by prying over rib of spring housing 165 with a pinch bar.
- (9) - Remove JAM NUTS and STANDARD NUTS from spring retaining bolts 145 and take spring RETAINERS 144 and housing SPRINGS 143 from spring housing 165.
- (10) - Remove spring housing mounting BOLTS 166 and take spring HOUSING 165 from frame of trailer.

45. DISASSEMBLY

Tools: 2 - 1-1/4" open end wrenches 1/8" punch
1-15/16" open end wrench

- (1) - Remove axle bracket clamp BOLTS 155 and drive STUB AXLE 154 from axle bracket 153.
- (2) - Remove bracket guide cap SCREWS 160 and take lower bracket GUIDES 158 and guide SHIMS 159 from spring housing 165.
- (3) - Pull MAIN AXLE out to one side of trailer.

46. MAINTENANCE AND INSPECTION. - Instructions given in this section cover removal and replacement of the spring and axle group which is required for complete shop reconditioning of the assembly. It is not required to remove all parts of the group for minor repair work. Axle brackets must be removed to make replacements of housing springs and inner bracket guides. Outer bracket guides are bolted to the spring housing and guides and guide shims may be replaced without removing axle brackets. Stub axles may be replaced without disassembly of the group. Minor fractures in axle brackets and spring housings may be repaired by welding without removing castings from the trailer.

47. ASSEMBLY

- (1) - Bolt inner bracket guides to upper ends of axle brackets 153.
- Note: Two shims and one guide in each seat are required when parts are new. When installing old parts add sufficient shims to compensate for wear on wearing surfaces of spring housing and bracket guides.

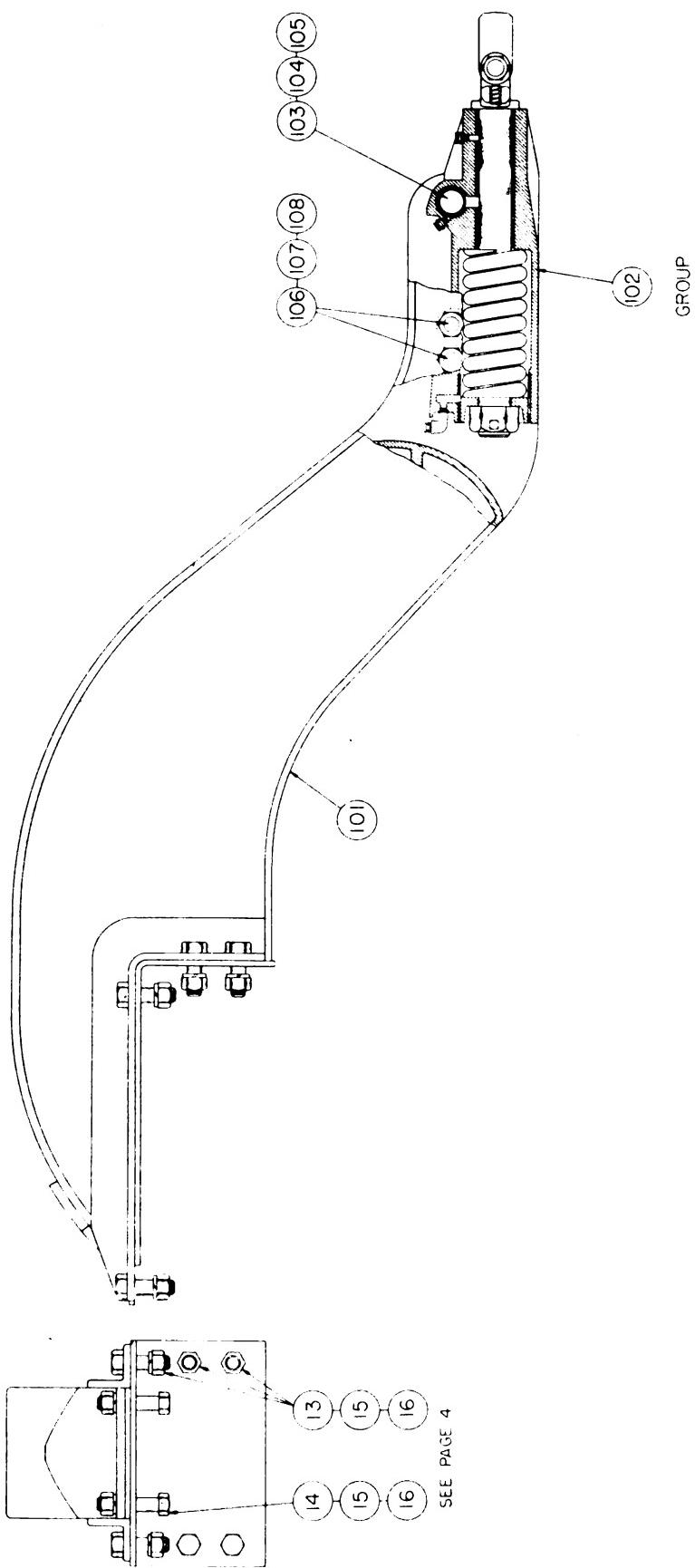
48. INSTALLATION

- (1) - Mount spring housings 165 and bolt to trailer frame.
- (2) - Slide main axle 147 through slotted hole in side frame members.
- (3) - Enter housing springs 143 over seats of spring housings, place spring retainers 144 in lower end of springs 143 and insert spring retainer bolts 145.
- (4) - Tighten nuts on spring retainer bolts 145 and compress housing springs 143.
- (5) - Install one axle bracket 153 on end of main axle 147 and insert main axle pin 148.

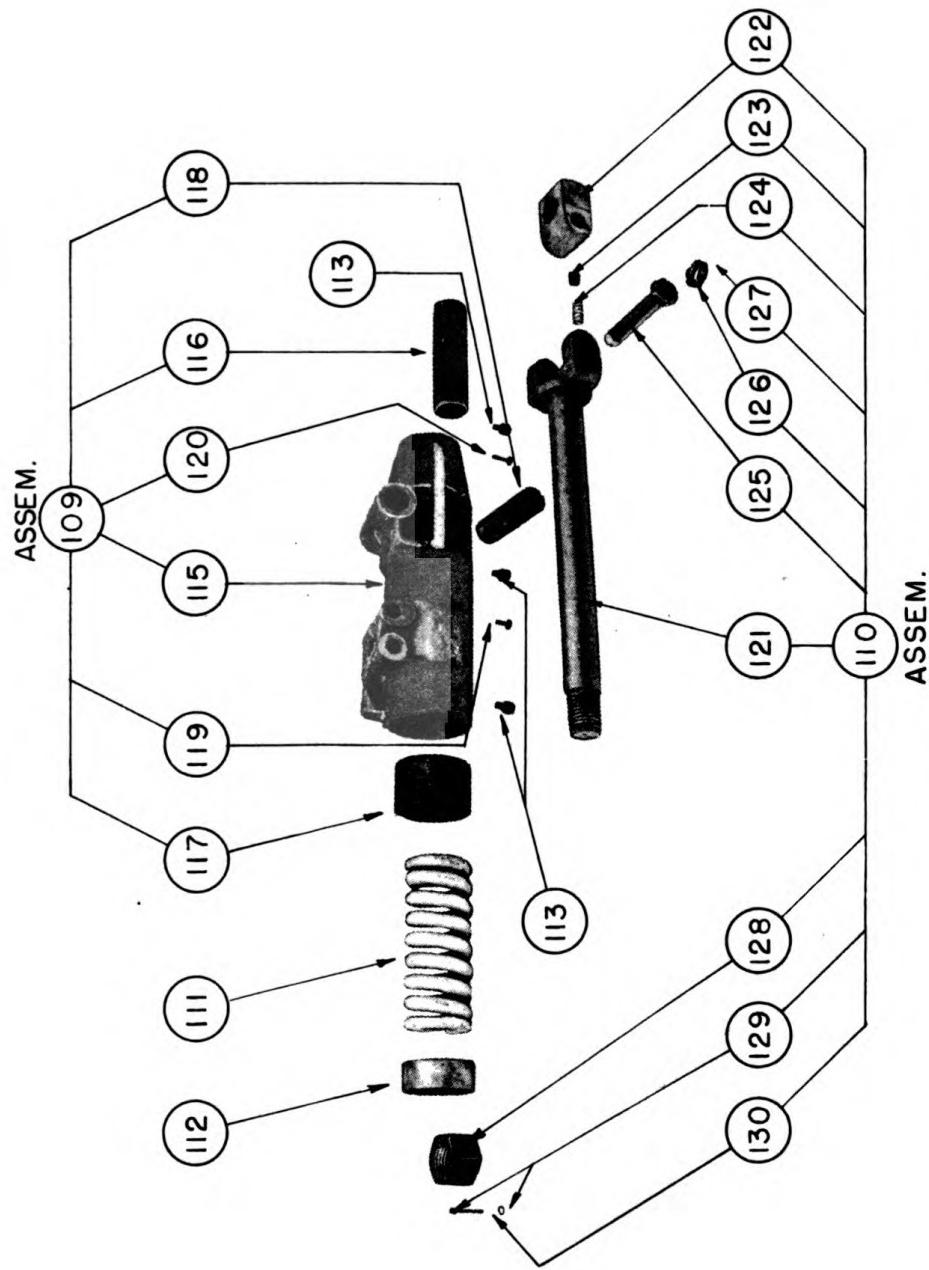
- (6) - Tighten clamp bolt in axle bracket 153 on top of main axle.
- (7) - Push axle bracket in until inner bracket guides are tight against frame of trailer.
- (8) - Install axle bracket on opposite end of main axle and insert main axle pin.
- (9) - Check between inner bracket guide and trailer frame to determine shim thickness, if any, is required to secure a tight fit between axle brackets and side frame members. If necessary remove one axle bracket and add required shims.
- (10) - Install upper axle bracket guides and guide shims making sure that axle bracket is tightly fitted and is centered in spring housing.
- (11) - Insert lower bracket guides 158 and center axle bracket 153 in spring housing 165.
- (12) - Install stub axle 154 in axle bracket 153 and line slot in axle with bolt hole in axle bracket.
- (13) - Install axle bracket clamp bolts and tighten.
- (14) - Loosen nuts on spring retainer bolts until spring retainers are seated in supports of axle brackets.
- (15) - Install jam nuts on spring retainer bolts.

Note: When nuts and jam nuts are installed on spring retainer bolts, one inch of bolt should extend above the jam nut for proper initial spring pressure.

- (16) - Install Forged-Trak wheels. See paragraph 33.



DRAWBAR ASSEMBLY
Fig. 49



FORK HOUSING ASSEMBLY (PARTS)
Fig. 50

Section IX

DRAWBAR ASSEMBLY
(Figs. 49 & 50)

Description	Paragraph
Removal	49
Disassembly	50
Maintenance and Inspection	51
Assembly	52
Installation	53
	54

49. DESCRIPTION. - The drawbar assembly is welded steel construction and is mounted to the front and upper deck of the trailer frame with heat treated cap screws. The drawbar assembly is equipped with the fork housing assembly which consists of a cast steel fork housing and spring cushioned swivel type tractor hitch for coupling to the tractor. The fork housing assembly is held to the front of the drawbar by cross studs which pass through the drawbar and the fork housing. The fork housing is equipped with cross bushing and two lengthwise bushings through which the drawbar fork operates. The drawbar fork is mounted lengthwise through the housing and the cushioning spring is fitted into the housing over the drawbar fork. A spring washer is put on over the end of the fork and the fork nut is used to hold the assembly in place.

50. REMOVAL. -

Tools:	Track jack	$\frac{1}{2}$ ton Chain hoist
	Machinist hammer	2 - 1 7/16" open end wrenches
	Punch	

- (1) - Jack up the front end of the TRAILER and block trailer frame for safety.
- (2) - Fasten CHAIN HOIST around curved section of drawbar to support the weight of the drawbar.
- (3) - Remove NUTS from mounting bolts and drive out MOUNTING BOLTS.
- (4) - Lift DRAWBAR ASSEMBLY from frame of trailer.

51. DISASSEMBLY

Tools:	Center punch	2 - 1 5/8" open end wrenches
	3/4" punch	1 - 1 1/2" open end wrench
	1/4" punch	9/16" open end wrench
	3 1/16" open end wrench	Pinch bar
	Sledge	Machinist hammer

- (1) - Remove COTTER KEYS and SLOTTED NUTS 104 and 107 from studs 103 and 106.
- (2) - Remove STUDS and take FORK HOUSING ASSEMBLY 102 from drawbar.
- (3) - Remove LOCK BOLT 129 from fork nut 128.
- (4) - Insert pinch bar through fork block 122 to keep fork assembly from turning and remove FORK NUT 128.
- (5) - Pull FORK 121 from fork housing 115.
- (6) - Remove SPRING WASHER 112 and SPRING 111 from fork housing 115.
- (7) - Remove SLOTTED NUT 126 and RETAINING BOLT 125 and FORK BLOCK 122.
- (8) - Drive out RIVETS 120 and 119.
- (9) - Remove BUSHINGS 116, 117 and 118.

Note: Bushings are a press fit in the fork housing and may be removed when replacement is necessary by splitting the bushing with a cutting torch.

52. MAINTENANCE AND INSPECTION. - Examine fork and fork block and replace or recondition as required. The retaining pin hole in the fork block and fork may be built up by welding, and reborod to proper size when parts are badly worn. Check plunger and plunger spring and replace if necessary. Badly worn bushings should be replaced in the fork housing when reconditioning work is being done on the assem-

bly. Bushings may be installed by driving them into the housing with an oak block and sledge, if a press is not available. When installing bushings be sure that the rivet holes and grease holes in bushings are correctly aligned with corresponding holes in the fork housing. Replace fork housing spring if necessary. Examine spring washer for wear and replace as required.

This section covers removal and disassembly of the drawbar assembly. For minor repairs on the drawbar 101, it is not necessary to remove it from the trailer. Cracks or fractures in the drawbar may be repaired by welding and reinforcing plate may be installed over badly fractured sections without removing the drawbar assembly.

53. ASSEMBLY. -

- (1) - Install bushings 116, 117 and 118 in fork housing.

Note: Bushings may be driven to place with an oak block and sledge if a press is not available. When installing bushings, be sure rivet holes and grease holes in bushings are aligned with corresponding holes in fork housing.

- (2) - Insert plunger spring 124 and plunger 123 in end of fork 121.

(3) - Install fork block 122 in fork 121 and insert retaining bolt 125 and install slotted nut 126.

- (4) - Enter threaded end of fork 121 through fork housing 115.

- (5) - Slip spring 111 over fork 121 and slide to place in fork housing 115.

(6) - Install spring washer 112 over threaded end of fork with flat surface of washer against end of spring.

(7) - Insert pinch bar through fork block 122 to keep fork assembly from turning.

(8) - Install fork nut 128 on fork 121 and tighten until hole in fork nut is aligned with hole in threaded end of fork.

- (9) - Insert retaining bolt 129 through fork nut 128 and tighten.

(10) - Lift fork housing assembly 109 to place in trailer drawbar and insert studs 103 and 106.

- (11) - Install slotted nuts 104 and 107 and insert cotter keys.

54. INSTALLATION. -

(1) - Fasten chain hoist to curved section of drawbar and lift drawbar to place on trailer frame.

- (2) - Insert mounting bolts and tighten.

INDEX TO ILLUSTRATIONS

<u>Figure</u>	<u>Title</u>
2	Model E-13 Bottom Dump Trailer (3/4 Front View) - - -
3	Lubrication Chart - - - - -
4	Discharging Material Over End of Fill - - - - -
5	Discharging Material on Levee - - - - -
6	Project Layout- - - - -
7	Forged-Trak Wheel Assembly- - - - -
8	Forged-Trak Track Assembly- - - - -
9	Counterbored Track Link Unit- - - - -
10	Rocker Beam and Track Wheel Assembly- - - - -
11	Uncoupling Track - - - - -
12	Track Uncoupled - - - - -
13	Track Shoe Removal- - - - -
14	Inserting Spacer Collar - - - - -
15	Installing Replacement Track Link - - - - -
16	Rolling Track Over Track Wheels - - - - -
17	Placing Link Hooks Over Lock Pin- - - - -
18	Lining Up Track Pin Holes - - - - -
19	Track Ready For Coupling- - - - -
20	Coupling Track- - - - -
21	Lock Pin Removal- - - - -
22	Lock Pin Installation - - - - -
23	Track Pin Removal - - - - -
24	Wheel Retaining Nut Removal - - - - -
25	Loosening Track Wheel - - - - -
26	Bearing Cage Installed- - - - -
27	Bearing Cage Assembly - - - - -
28	Removing Axle Cap Pin and Axle Cap- - - - -
29	Removing Forged-Trak Wheel Assembly - - - - -
30	Raising End of Track- - - - -
31	Separating Track By Burning Through Bearings- - - - -
32	Burned Track Pin Bushing And Track Pin- - - - -
33	Removing Track Shoes- - - - -
34	Coupling Sections of Track- - - - -
35	Loosening Track Wheel - - - - -
36	Rocker Beam Assembly (Showing Two Track Wheels Remov
37	Rocker Beam Ready For Disassembly - - - - -
38	Removing Spindle and Bearings - - - - -
39	Position of Spindle For Bearing Cage Removal- - -
40	Rocker Beam and Track Wheel Assembly (Exploded View)
41	Spindle and Bearings- - - - -
42	Windup Channel Assembly (Parts) - - - - -
43	Windup Channel Assembly - - - - -
44	Spring Housing Assembly (Parts) - - - - -
45	Tractor Dumping Control (Parts) - - - - -
46	Gear Housing Assembly (Parts) - - - - -
47	Spring Mounted Axle Group (Parts) - - - - -
48	Spring Mounted Axle Group Assembly - - - - -
49	Drawbar Assembly- - - - -
50	Fork Housing Assembly (Parts) - - - - -

INDEX TO TEXT

OPERATIONS SECTION

	<u>Paragraphs</u>	<u>Pages</u>
INTRODUCTION		
Scope	1	4
Data	2	4
DESCRIPTION AND CHARACTERISTICS		
General Description	3	5
Characteristics	4	5
LUBRICATION		
Records	5	6
Supplies.	6	6
Schedules	7	6
OPERATING INSTRUCTIONS		
Operation	8	8
Making Fills.	9	9
Levee Construction.	10	9
Layout of Project	11	10
GENERAL INSPECTION		
Purpose	12	11
Body and Doors.	13	11
Frame	14	11
Forged-Trak Wheels.	15	11
Semi-automatic Spring Windup.	16	12
Drawbar Assembly.	17	12
Spring and Axle Group	18	12

REPAIR SECTION

FORGED-TRAK WHEELS		
FIELD SERVICE OF FORGED-TRAK WHEELS		
Description	19	13,14,18
Trouble Shooting.	20	18
Maintenance and Inspection.	21	18,19
Track Link Replacement.	22	19,21
Lock Pin Replacement.	23	25
Track Pin Replacement	24	26
Track Wheel Replacement	25	27
Bearing Cage and Oil Seal Replacement	26	28
SHOP RECONDITIONING OF FORGED-TRAK WHEELS		
Removal of Forged-Trak Wheel Assembly	27	30
Shop Maintenance and Repair of Forged-Trak Track.	28	32
Install Forged-Trak Track Assembly.	29	35
Disassembly of Rocker Beam and Track Wheel Assembly	30	36
Maintenance and Repair of Rocker Beam and Track Wheel Assembly.	31	39
Assembly of Rocker Beam and Track Wheel Assembly.	32	41
Installation of Forged-Trak Wheel Assembly.	33	42
SEMI-AUTOMATIC SPRING WINDUP		
Description	34	45,47
Trouble Shooting.	35	47
Adjustments	36	47,48
Torsion Spring Replacement.	37	48
Windup Removal.	38	48,49
Disassembly	39	49
Maintenance and Inspection.	40	49,50
Assembly.	41	50
Installation.	42	50
SPRING MOUNTED AXLE GROUP		
Description	43	52
Removal	44	53
Disassembly	45	53

INDEX TO TEXT

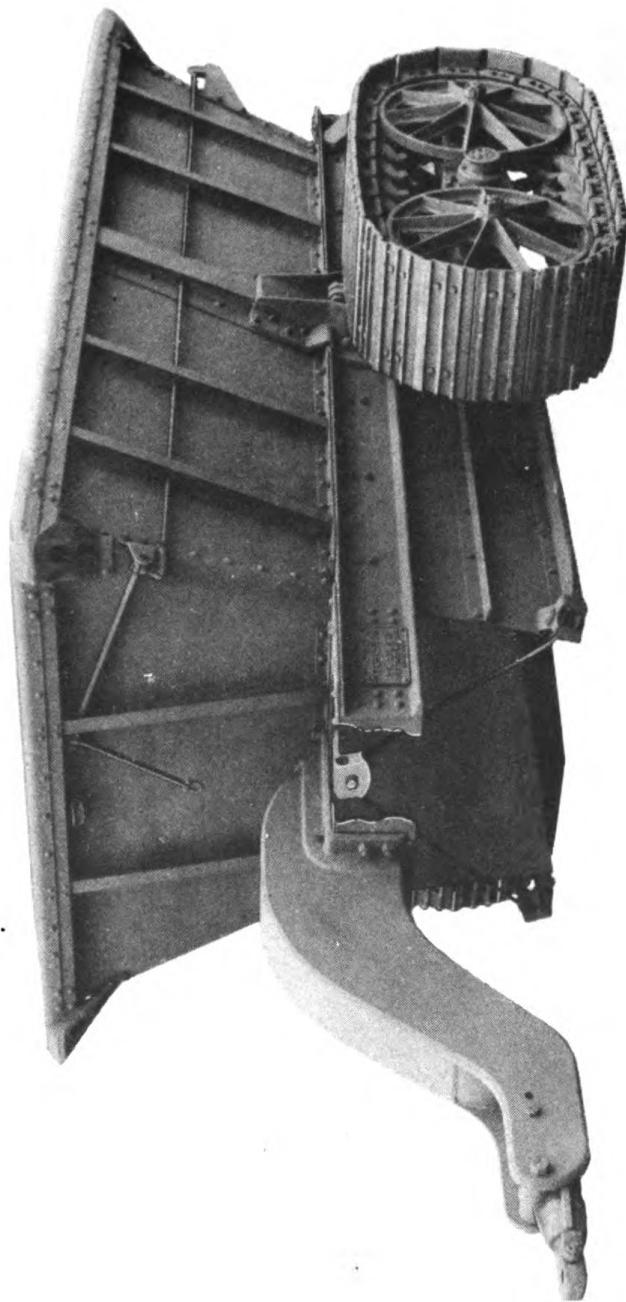
	<u>Paragraphs</u>	<u>Pages</u>
SPRING MOUNTED AXLE GROUP (Cont'd)		
Maintenance and Inspection	46	53
Assembly	47	53
Installation	48	53, 54
DRAWBAR ASSEMBLY		
Description	49	57
Removal	50	57
Disassembly	51	57
Maintenance and Inspection	52	57, 58
Assembly	53	58
Installation	54	58

INDEX TO SPARE PARTS, SEE PAGE 65

SECTION 3

PARTS

CATALOG



ATHEY FORGED-TRAK BOTTOM DUMP TRAILER, 13 YARD CAPACITY

Assembly No. E-13 CODE: YYJJB

See Page 66 & 67

INDEX TO UNITS

	Description	Page
Axle Group - Spring Mounted (E-750)-	- - - - -	75
Beam Assembly - Rocker (E-5A)-	- - - - -	104
Body (E-520) -	- - - - -	66
Bracket - Front Sheave (D-356) -	- - - - -	67
Bracket Assembly - Axle (E-751A) -	- - - - -	75
Bracket Assembly - Bearing (D-406A) -	- - - - -	93
Bracket Assembly - Rope Sheave (D-454A) -	- - - - -	102
Cage Assembly - Bearing (18T-10) -	- - - - -	104
Channel Assembly - Dump Mechanism (D-462A) -	- - - - -	86
Control - Tractor Dumping - For Front Unit (E-451B) -	- - - - -	98
Control - Tractor Dumping - For Rear Unit (C-452) -	- - - - -	100
Coupler - Rear (D-105) -	- - - - -	66
Door Assembly (E-527A) -	- - - - -	78
Drawbar Assembly - Arched (E-150A) -	- - - - -	70
Fork Assembly (5T-588-75) -	- - - - -	72
Frame (E-526) -	- - - - -	66
Gear Assembly (Hand Automatic Dump Mechanism) (D-408A) -	- - - - -	90
Greasing Equipment and Tools -	- - - - -	109
Handle - Rear (D-509) -	- - - - -	67
Housing Assembly - Fork (E-152A) -	- - - - -	72
Housing Assembly - Gear (D-403A) -	- - - - -	94
Housing Assembly - Spring (Spring Mounted Axle Group) (E-753A) -	- - - - -	75
Housing Assembly - Spring (Hand Automatic Dump Mechanism) (E-425A) -	- - - - -	95
Housing & Fork Group - Fork (E-151A) -	- - - - -	72
Lever Assembly - Roller Trip (D-405A) -	- - - - -	92
Lever Assembly - Trip (D-313C) -	- - - - -	91
Link Unit - Replacement Track (With Track Plate) (7E-72) -	- - - - -	108
Link Unit - Replacement Track (Without Track Plate) (7E-73) -	- - - - -	108
Mechanism - Hand Automatic Dump (E-450B) -	- - - - -	85
Numerical Index -	- - - - -	110, 111
Pin - Front Sheave (D-357) -	- - - - -	67
Pin - Rear Coupler (T-313-4A) -	- - - - -	66
Pin - Sheave (D-331-1) -	- - - - -	67
Pin Set - Floating Type Lock (5E-83) -	- - - - -	106
Plate - Name (D-118) -	- - - - -	67
Rocker Beam & Wheel Assembly (One Only) (7E-3) -	- - - - -	104
Rocker Beam Assembly (E-5A) -	- - - - -	104
Rope - Plow Steel Wire (E-322) -	- - - - -	67
Sheave Assembly - Door (D-329-1A) -	- - - - -	81
Sheave Assembly - Frame (D-329A) -	- - - - -	84
Sheave Assembly - Front (D-326A) -	- - - - -	83
Spacer (D-352) -	- - - - -	66
Spindle Assembly - Track Wheel (18T-8) -	- - - - -	104
Step Assembly - Rear (E-450B) -	- - - - -	85
Tools -	- - - - -	109
Track Assembly (7E-50) (One Only) -	- - - - -	106
Wheels - Athey Forged-Trak (One Only) (7E-1) -	- - - - -	103
Wheels - Athey Forged-Trak (Pair) (7E-2) -	- - - - -	103

ATHRY FORGED-TRAK BOTTOM DUMP TRAILER, 13 Yard Capacity.
 Steel Body, Steel Frame, Spring Mounted. Semi Automatic Wind-Up. Model 7E (20-Ton) Forged-Trak Wheels, 20" Heat Treated Track Plates. Special Drawbar, Spring Cushioned, Adjustable Hitch.

Assembly No. E-13 CODE: YYJJJB

See Page 67, 68 & 69, Fig. 51

Code	Part No.	Description	No. Req'd	Photo No.
YYICF	E-520	Body - - - - -	1	1
YMEJM	T-1507S	Cap Screw - 5/8"-18 x 2 1/2" S.A.E. H.T.) Body - - -	4	2
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) to - - -	4	3
YAJVU	T-455	Washer - 5/8" Lock) End Sill - -	4	4
YFGXA	6T-1111S	Cap Screw - 5/8"-18 x 1 3/4" A.E. H.T.) Body to - -	16	5
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) Side - - -	16	6
YAJVU	T-455	Washer - 5/8" Lock) Frame Bulb - -	16	7
YMEJM	T-1507S	Cap Screw - 5/8"-18 x 2 1/2" S.A.E. H.T.) Body to - -	2	8
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) Front - - -	2	9
YAJVU	T-455	Washer - 5/8" Lock) Bulb - - -	2	10
YYIDR	E-526	Frame - - - - -	1	11
YYHNM	E-150A	Drawbar Assembly - Arched (See Page 70) - - - - -	1	12
YPIWE	T-1959-2	Cap Screw - 1"-14 x 3 1/4" S.A.E. H.T.) E-150A - - -	8	13
YPESE	T-1959-18	Cap Screw - 1"-14 x 4 1/4" S.A.E. H.T.) to - - -	2	14
YKGQX	T-1676	Nut - 1"-14 S.A.E. Hex) - - -	10	15
YARUM	T-729	Washer - 1" Lock) E-526 - - -	10	16
YOZAX	D-105	Coupler - Rear - - - - -	1	17
YCQUW	T-1959-14	Cap Screw - 1"-14 x 3 1/2" S.A.E. H.T.) D-105 - - -	5	18
YKGQY	T-1676	Nut - 1"-14 S.A.E. Hex) to - - -	5	15
YARUM	T-729	Washer - 1"-14 Lock) E-526 - - -	5	16
YIRTO	T 313-4A	Pin - Rear Coupler - - - - -	1	19
YBUZK	T-1454-1	Pin - 5/16" x 2 1/2" Cotter - - - - -	1	20
YYIIC	E-750	Axle Group - Spring Mounted (See Page 75) - - - - -	1	22
YPOGC	D-131-1	Cap Screw - 1 1/4"-12 x 4 1/8" Special S.A.E.) E-750 -	4	23
YEYPB	5T-598-4	Cap Screw - 1 1/4"-12 x 4 1/8" S.A.E. H.T.) -	4	24
YMRRE	T-1686-1	Nut - 1 1/4"-12 S.A.E. Hex) to - -	8	25
YMIGP	T-1416	Washer - 1 1/4" Lock) -	8	26
YNAUP	T-1509S	Cap Screw - 5/8"-18 x 3 1/4" S.A.E. H.T.) E-520 -	16	27
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) & -	16	28
YAJVU	T-455	Washer - 5/8" Lock) E-526 -	16	29
YYIKE	E-527A	Door Assembly (See Page 78) - - - - -	2	30
YAVTO	T-886	Cap Screw - 5/8"-18 x 2" S.A.E.) Hinge Bracket -	12	31
YBBSE	T-1509	Cap Screw - 5/8"-18 x 3 1/4" S.A.E.) -	12	32
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) to - -	24	33
YAJVU	T-455	Washer - 5/8" Lock) Frame - -	24	34
YYHTJ	E-350B	Step Assembly - Rear (See Page 82) - - - - -	1	35
YPLOW	D-352	Spacer - - - - -	1	36
YEZB	5T-598-3	Cap Screw - 1 1/4"-12 x 5" Special S.A.E. - - - - -	1	37
YEFSD	5T-106	Nut - 1 1/4"-12 S.A.E. Hex (Full Slotted) - - - - -	1	38
YCQYU	5T-8	Washer - - - - -	1	39
YCSIQ	5T-25	Pin - 3/16" x 2 1/4" Cotter - - - - -	1	40

E-13 Athey Forged-Trak Bottom Dump Trailer, continued:-

Code	Part No.	Description	No. Req'd	Photo No.
IPCJU	D-326A	Sheave Assembly - Front (See Page 83)	1	41
YYHHC	D-357	Pin - Front Sheave	1	42
YBUZK	T-1454-1	Pin - 5/16" x 2 1/2" Cotter	1	43
YYHGP	D-356	Bracket - Front Sheave	1	44
YUABS	D-329A	Sheave Assembly - Frame (See Page 84)	2	45
YYHFD	D-331-1	Pin - Sheave	2	46
YFUZG	TF-15-1	Pin - 3/8" x 2" Cotter	2	47
YWMME	E-322	Rope - Plow Steel Wire (44' - 5' Long)	1	48
Y0ZOR	D-118	Plate - Name	2	49
YYILN	T-1407-1	Screw - 3/8"-16 x 1 3/4" Rd. Hd. Machine	8	50
YAJOL	T-452	Nut - 3/8"-16 U.S.S. Hex	8	51
YAKPL	T-469	Washer - 3/8" Lock	8	52
YUAVV	D-509	Handle - Rear	1	53
YMJUJ	T-1457	Cap Screw - 1/2"-20 x 1 1/4" S.A.E.)	2	54
YBBEL	T-1502	Nut - 1/2"-20 S.A.E. Hex) to	2	55
YADGM	T-233	Washer - 1/2" Lock) E-520	2	56
YYHXH	E-450B	Mechanism - Hand Automatic Dump (See Page 85)	1	57
YUDMO	TE-2	Wheels - Athey Forged-Trak (Pair) (20" Heat Treated Track Plates) (See Page 103)	1	58

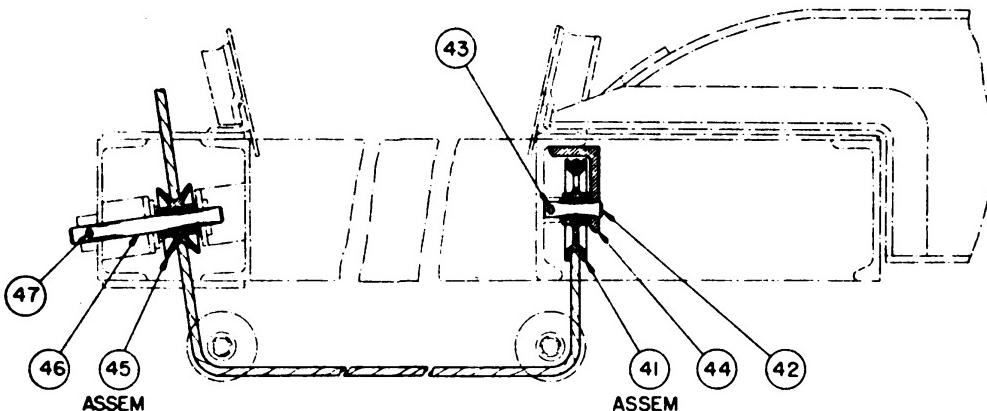
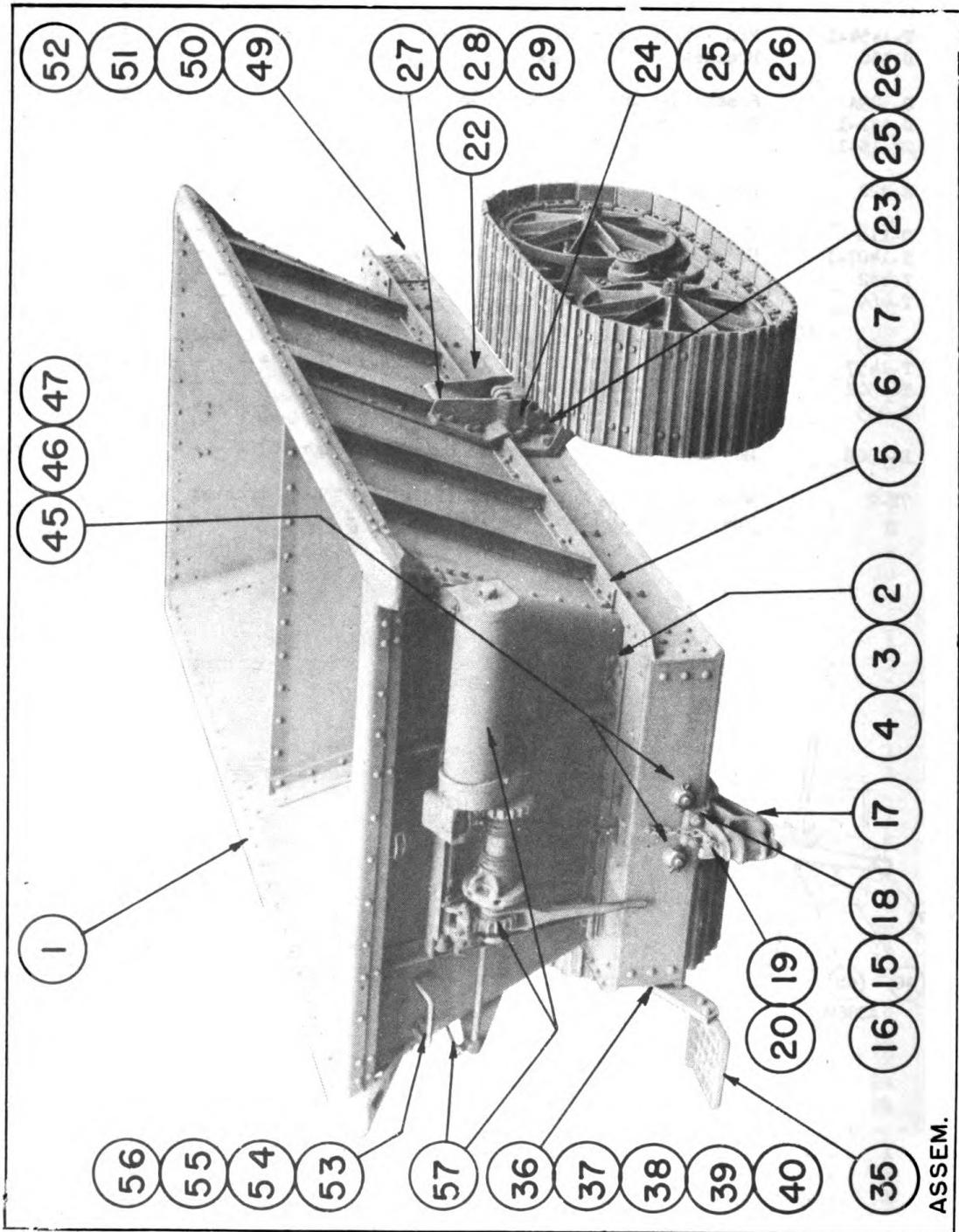
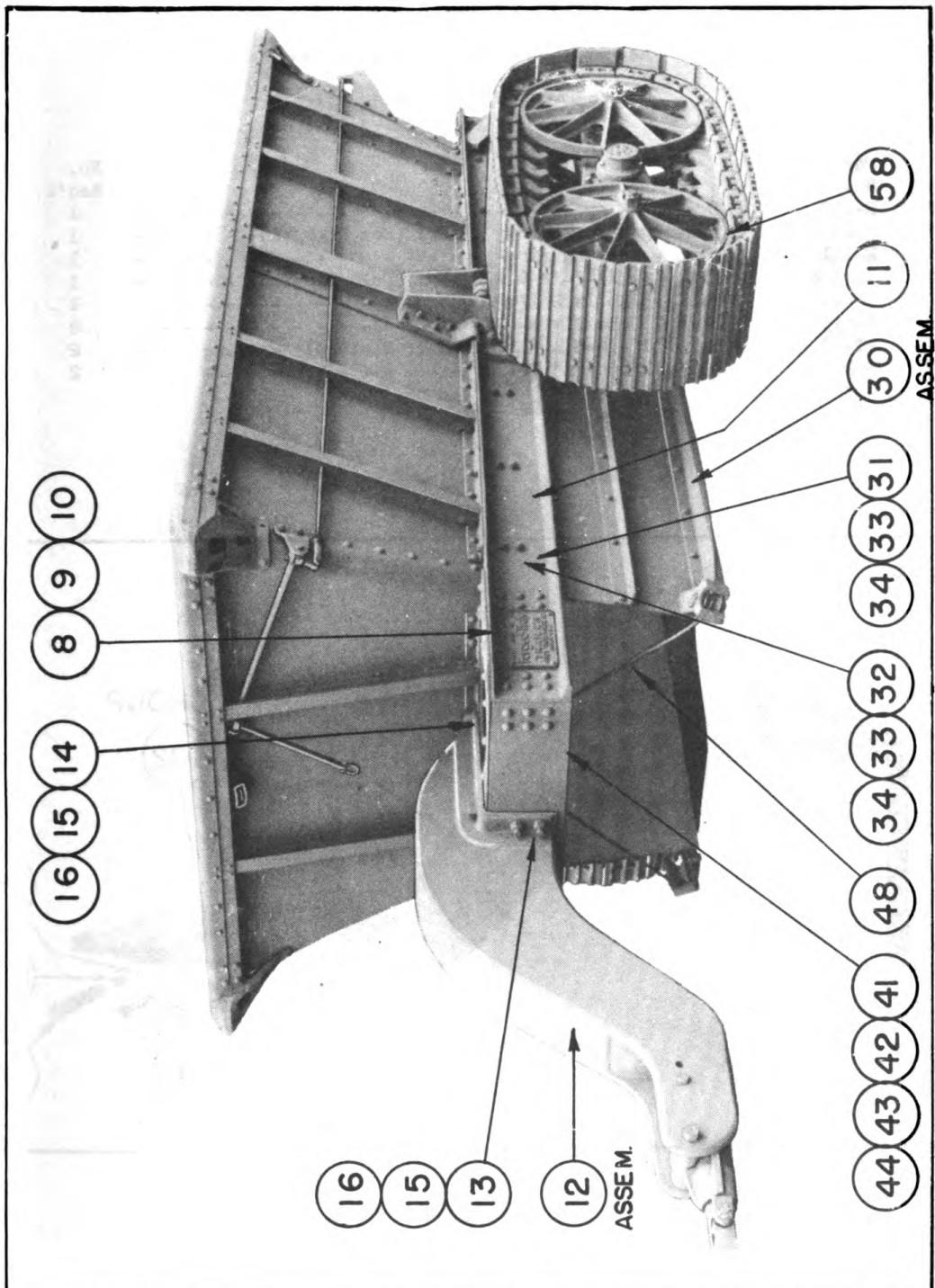


Fig. 51



See Page 66 & 67 For List



See Page 66 & 67 For List

DRAWBAR ASSEMBLY - ARCHED

Assembly No. E-150A CODE: YYHNM

See Page 70 & 71, Fig. 52

Part	No.	Description	No.	Photo
Code	No.		Req'd	No.
YYHOY	E-150	Drawbar - Arched - - - - -	1	101
YYHPL	E-151A	Housing & Fork Group - Fork (See Page 72) - - - - -	1	102
YSREO	E-111	Stud - Fork Housing - - - - -	1	103
YEFSD	5T-106	Nut - 1 1/4"-12 S.A.E. Hex (Full Slotted) - - - - -	1	104
YCSIQ	3T-25	Pin - 3/16" x 2 1/4" Cotter - - - - -	1	105
YYHLA	E-113	Bolt - Yoke Pivot - - - - -	2	106
YDESQ	4T-19	Nut - 1"-14 S.A.E. Jam (Half Slotted) - - - - -	2	107
YADRT	T-240	Pin - 1/8" x 2" Cotter - - - - -	2	108

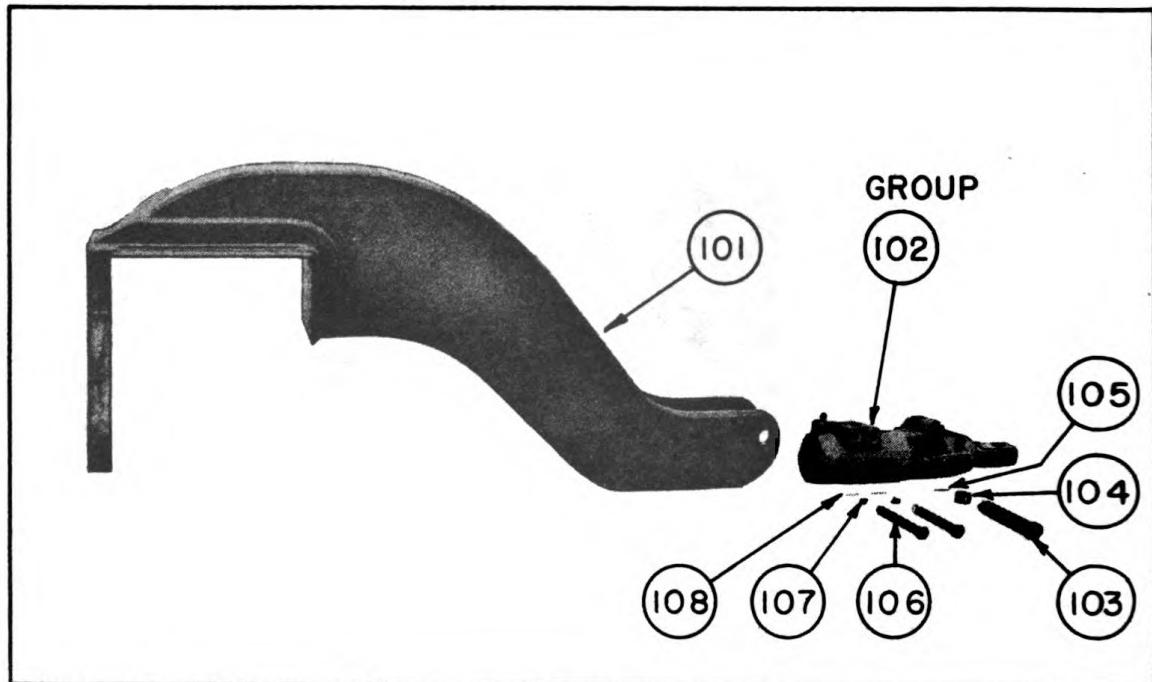
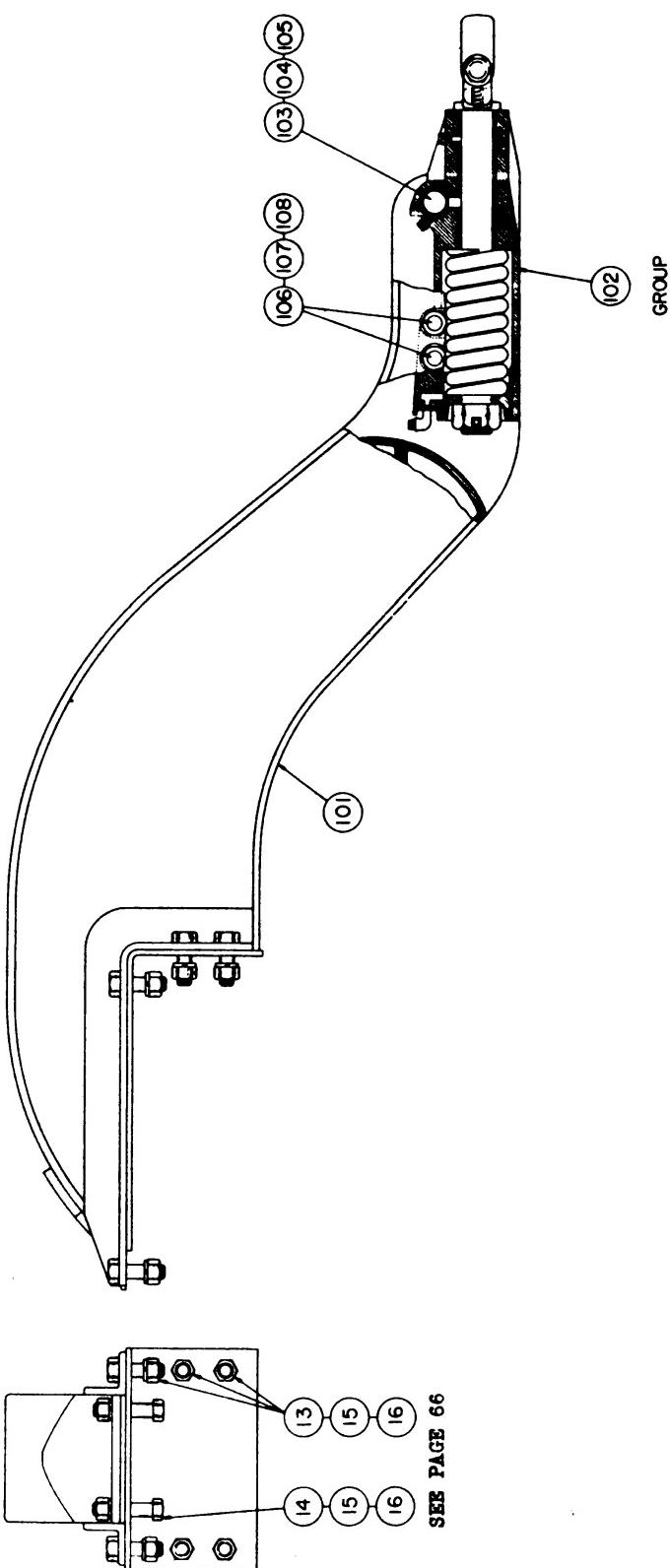


Fig. 52



HOUSING A FORK GROUP - FORK

Assembly No. E-151A CODE: YYHPL

See Page 73, Fig. 53

Code	Part No.	Description	No. Req'd	Photo No.
YYHQX	E-152A	Housing Assembly - Fork (See list below) - - - - -	1	109
YEJAB	5T-588-75	Fork Assembly (See list below) - - - - -	1	110
YELKK	5T-537	Spring - - - - -	1	111
YOYYM	D-103	Washer - Spring - - - - -	1	112
YXQYM	25-2	Fitting - 1/4" Industrial Alemite (No. 1611) - - - - -	3	113

HOUSING ASSEMBLY - FORK

Assembly No. E-152A CODE: YYHQX

See Page 73, Fig. 53

YYHFK	E-152	Housing - Fork - - - - -	1	115
YYHSW	E-157	Bushing - Front - - - - -	1	116
YOZEW	D-108	Bushing - Rear - - - - -	1	117
YOZFJ	D-109	Bushing - Cross - - - - -	1	118
YKJOB	T-1389-1	Rivet - 3/8" x 5/8" Flat Head - - - - -	1	119
YKJQA	T-1389-2	Rivet - 3/8" x 7/8" Flat Head - - - - -	1	120

FORK ASSEMBLY

Assembly No. 5T-588-75 CODE: YEJAB

See Page 73, Fig. 53

YENQJ	5T-592	Fork - - - - -	1	121
YEUEH	5T-593-75	Block - - - - -	1	122
YENQI	5T-594	Plunger - - - - -	1	123
YENRU	5T-595	Spring - - - - -	1	124
YENSH	5T-596	Cap Screw - 1 1/8"-12 x 5 7/8" S.A.E. H.T. - - - - -	1	125
YEIXC	5T-658	Nut - 1 1/8"-12 S.A.E. Jam (Half Slotted) - - - - -	1	126
YADRT	T-240	Pin - 1/8" x 2" Cotter - - - - -	1	127
YADSG	T-241	Nut - 2"- 4 1/2 U.S.S. Hex - - - - -	1	128
YADTS	T-242	Bolt - 5/16"-18 x 3 1/2" Machine - - - - -	1	129
YADUF	T-243	Washer - 5/16" Lock - - - - -	1	130

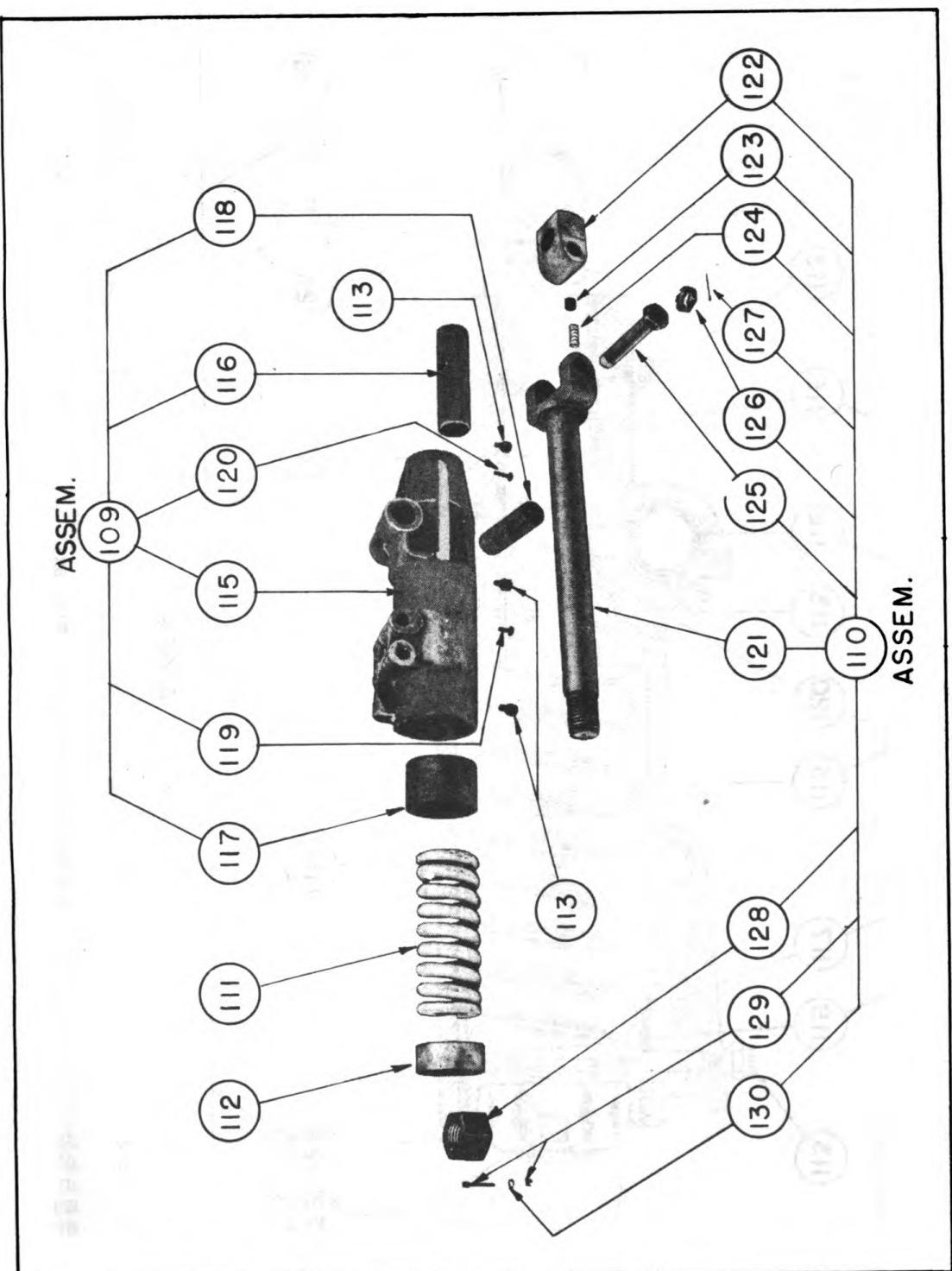
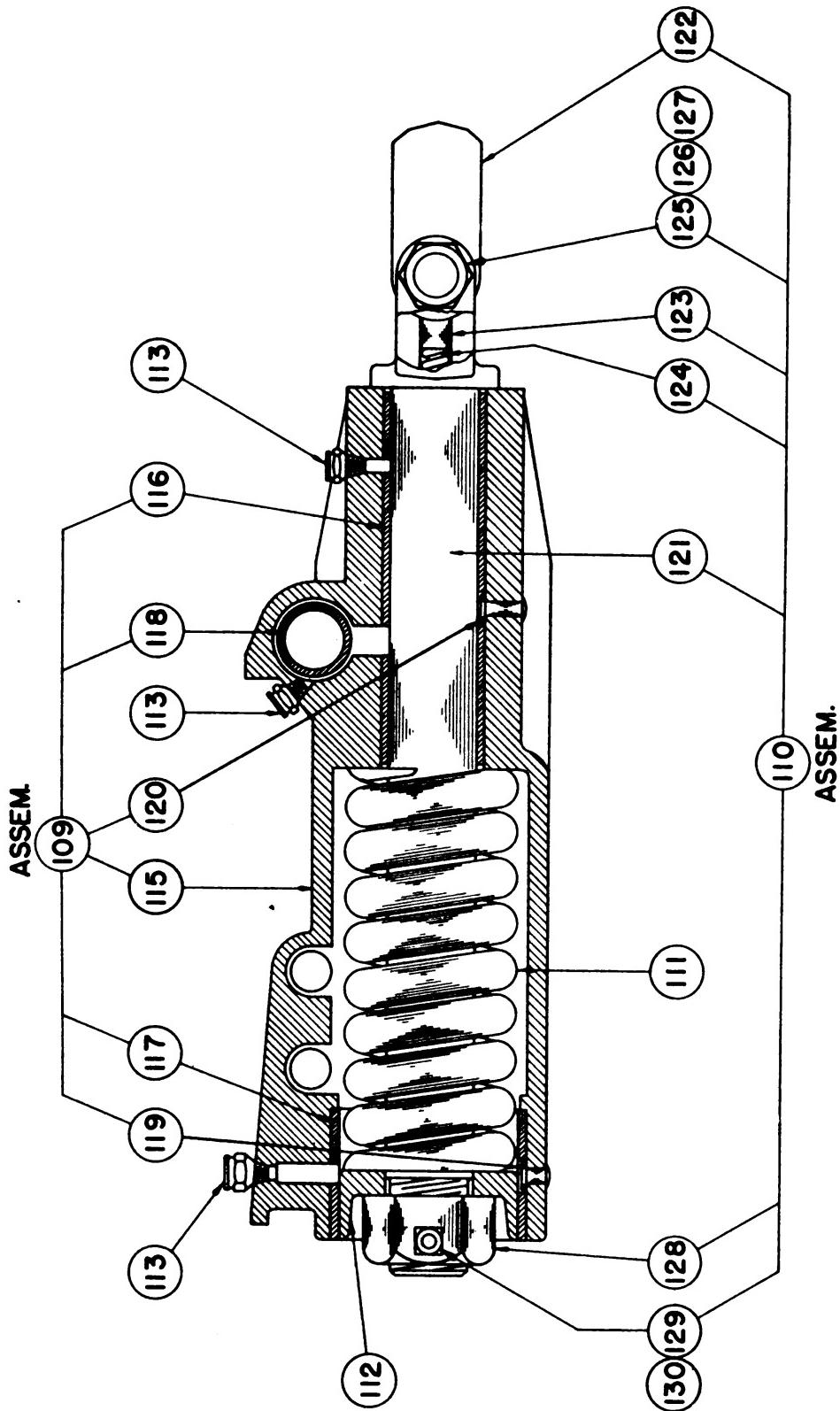


Fig. 53



See Page 72 For List

Fig. 53

AXLE GROUP - SPRING MOUNTED

Assembly No. E-750 CODE: YYIIC

See Page 76 & 77, Fig. 54

Code	Part No.	Description	No. Req'd	Photo No.
YYIJO	E-751A	Bracket Assembly - Axle (See list below)	2	141
YYIPY	E-753A	Housing Assembly - Spring (See list below)	2	142
YGUBE	E-706	Spring	4	143
YPOLZ	E-759	Retainer - Spring	4	144
YIXVT	T-3173	Cap Screw - 1 1/8"-12 x 10 1/2" Special S.A.E.	4	145
YMOLD	T-1662	Nut - 1 1/8"-12 S.A.E. Hex	8	146
YYIHP	E-732	Axle - Main	1	147
YYIGD	E-731	Pin - Main Axle	2	148
YFWXI	TT-15	Pin - 3/8" x 3" Cotter	4	149
YHVEC	8T-1240A	Cap Assembly - Axle	2	150
YHWGO	8T-1243F	Pin - Axle Cap	2	151
YASFH	T-740	Pin - 1/4" x 1 1/2" Cotter	2	152

BRACKET ASSEMBLY - AXLE

Assembly No. E-751A CODE: YYLJO

See Page 76 & 77, Fig. 54

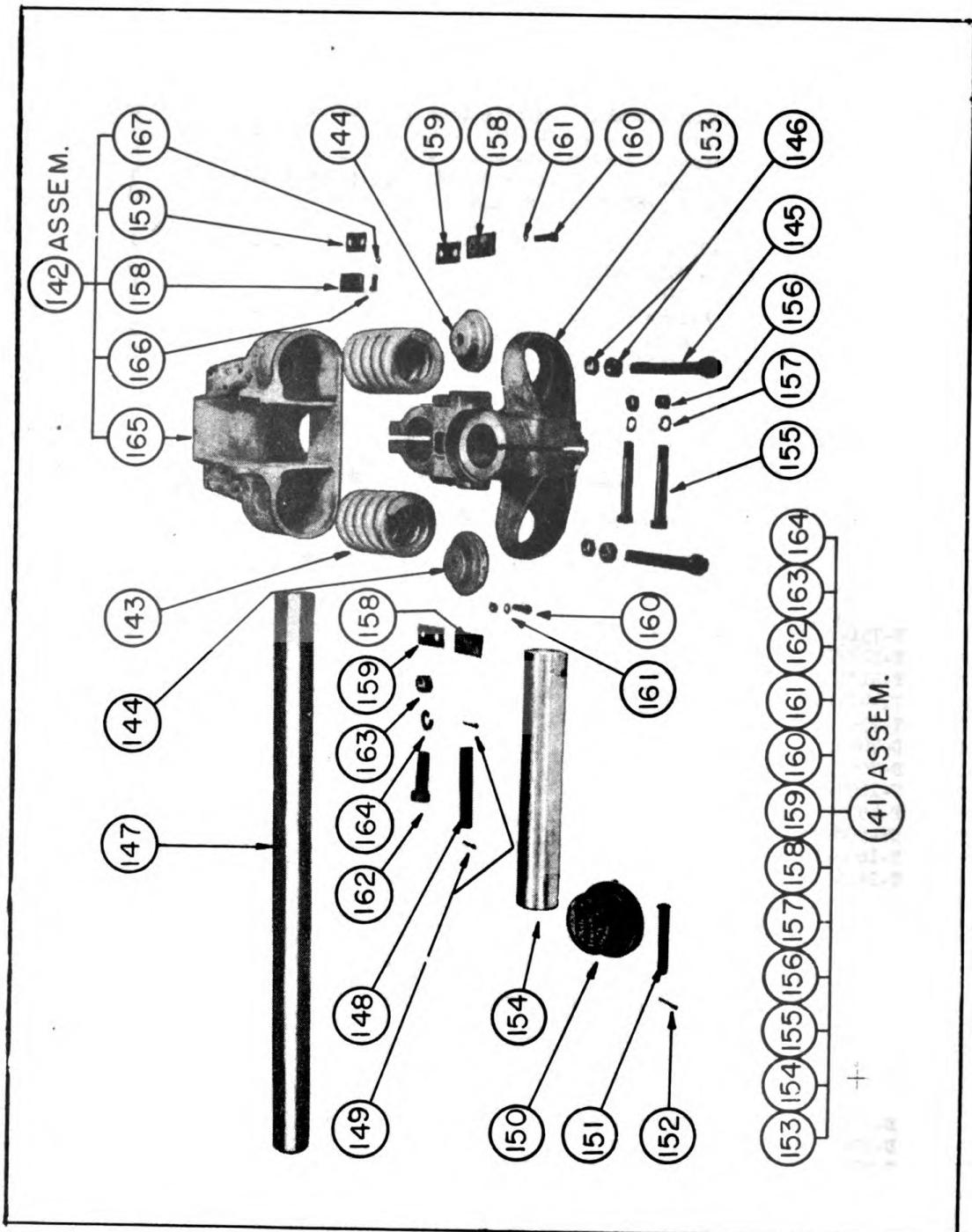
YYIKB	E-751	Bracket - Axle	1	153
YYHMZ	E-127-7	Axle - Stub	1	154
YDBEJ	T-3177	Cap Screw - 7/8"-14 x 6 1/2" S.A.E. H.T.	2	155
YGFFU	TT-476-1	Nut - 7/8"-14 S.A.E. Hex	2	156
YASTA	T-754	Washer - 7/8" Lock	2	157
YEVHQ	D-704	Shim	2	158
YEVID	D-705	Shim	8	159
YYINZ	T-1657-2	Cap Screw - 5/8"-18 x 3 5/8" S.A.E. H.T.	4	160
YAJVU	T-455	Washer - 5/8" Lock	4	161
YEJTR	5T-598-2	Cap Screw - 1 1/4"-12 x 5" S.A.E. H.T.	1	162
YMWRE	T-1686-1	Nut - 1 1/4"-12 S.A.E. Hex	1	163
YMOGP	T-1416	Washer - 1 1/4" Lock	1	164

HOUSING ASSEMBLY - SPRING

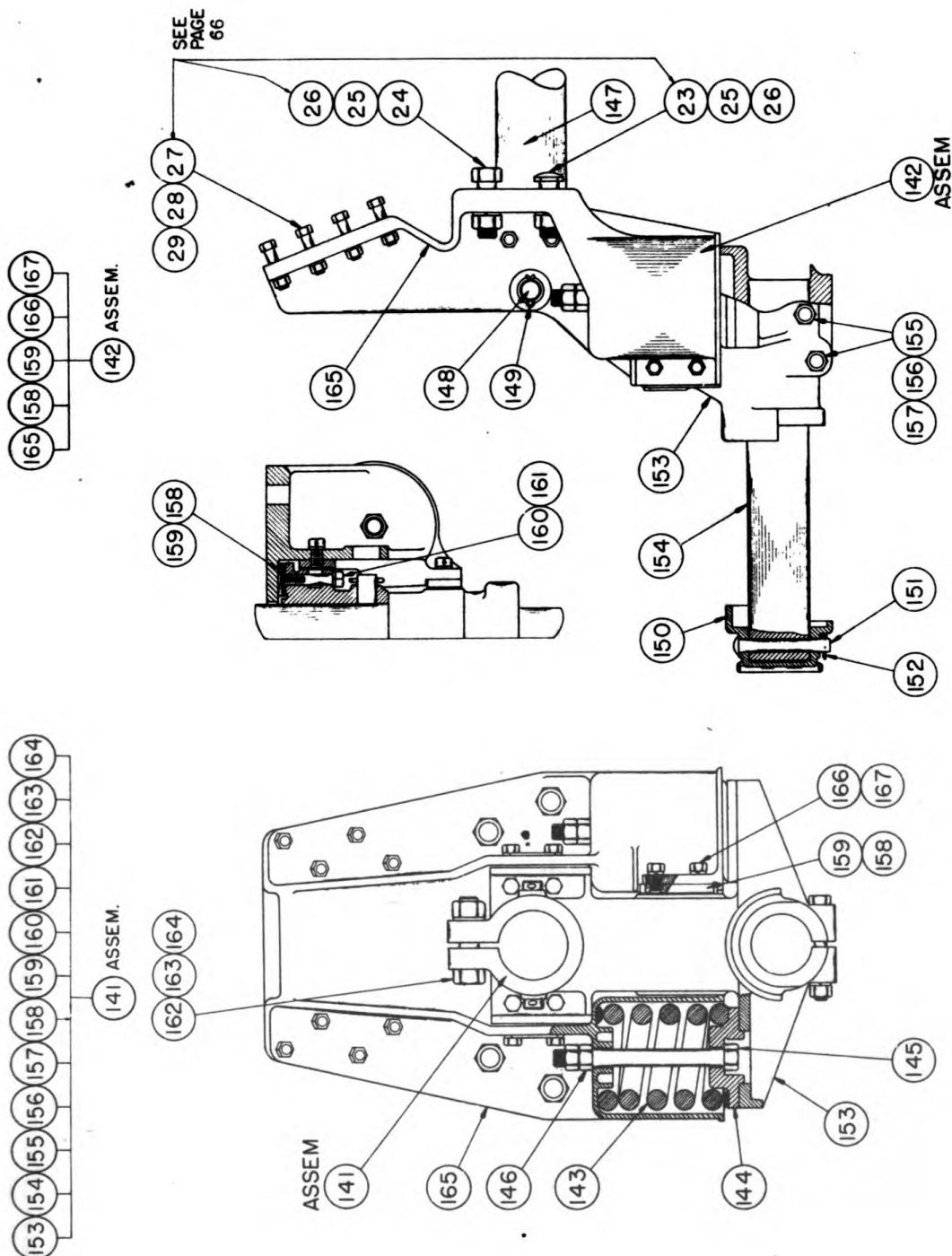
Assembly No. E-753A CODE: YYIPY

See Page 76 & 77, Fig. 54

YYIQL	E-753	Housing - Spring	1	165
YEVHQ	D-704	Shim	4	158
YEVID	D-705	Shim	16	159
YYMHR	T-1500-5	Cap Screw - 5/8"-18 x 1 1/4" S.A.E. H.T.	8	166
YAJVU	T-55	Washer - 5/8" Lock	8	167



See Page 75 For List



643709 O - 45 - 6

See Page 75 For List

DOOR ASSEMBLY

Assembly No. E-527A CODE: YYIEE

See Page 79 & 80, Fig. 55

Code	Part No.	Description	No. Req'd	Photo No.
YYIFQ	E-527	Door - - - - -	1	175
YZZYU	D-329-1A	Sheave Assembly - Door (See Page 81) - - - - -	2	176
YUACF	D-330	Pin - Door Sheave - - - - -	2	177
YBUZK	T-1454-1	Pin - 5/16" x 2 1/2" Cotter - - - - -	4	178
YUDIQ	E-203	Guide - Bumper Spring Housing & Cable - - - - -	1	179
YOKHH	D-204	Plunger - Bumper Spring - - - - -	1	180
YOKIT	D-205	Spring - Bumper - - - - -	1	181
YFILEX	6T-1111	Cap Screw - 5/8"-18 x 1 3/4" S.A.E. - - - - -	2	182
YAVTO	T-886	Cap Screw - 5/8"-18 x 2" S.A.E. - - - - -	4	183
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex - - - - -	6	184
YAJVU	T-455	Washer - 5/8" Lock - - - - -	6	185
YOKDJ	D-200	Bracket - Hinge - - - - -	12	186
YFILEX	6T-1111	Cap Screw - 5/8"-18 x 1 3/4" S.A.E.)D-200	12	187
YMJEK	T-1441	Cap Screw - 5/8"-18 x 3" S.A.E.)	12	188
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex)to	24	189
YAJVU	T-455	Washer - 5/8" Lock)E-527	24	190
YOKEV	D-201	Link - Hinge - - - - -	6	191
YMEJI	T-1688S	Cap Screw - 3/4"-16 x 4" Special S.A.E.)D-201	12	192
YOGQH	4T-1266	Nut - 3/4"-16 S.A.E. Castellated) to	12	193
YBTOC	T-1913	Pin - 1/8" x 1 1/2" Cotter)D-200	12	194

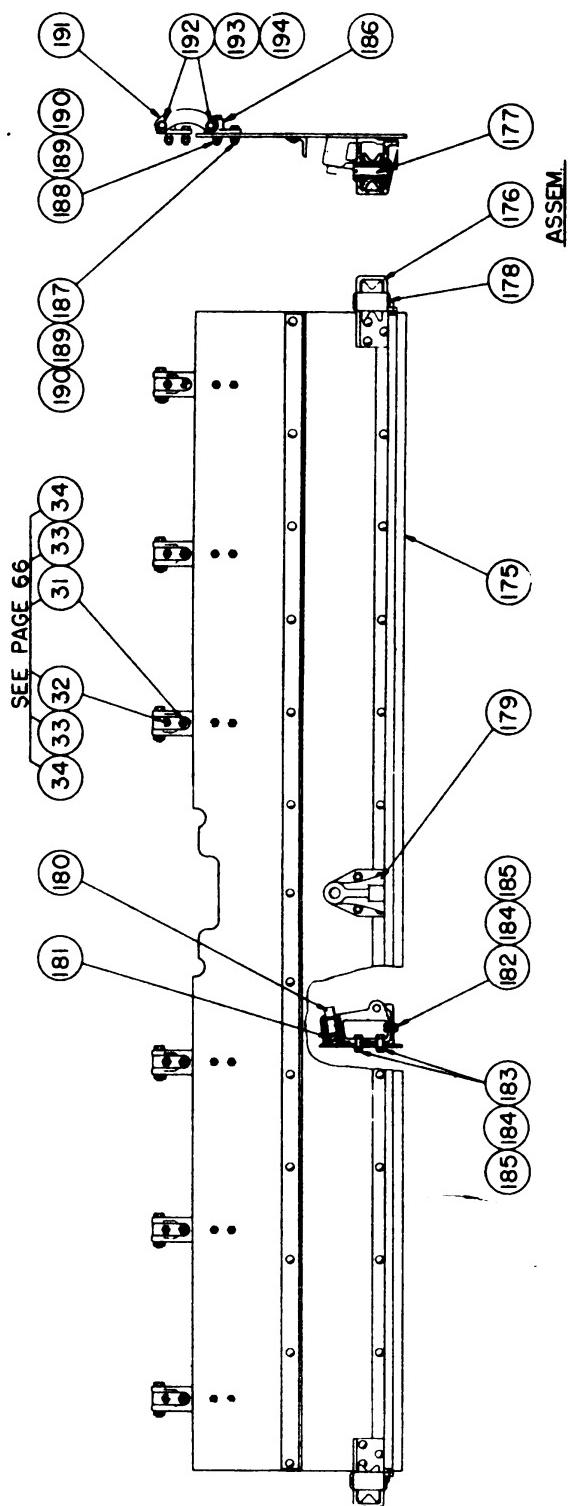
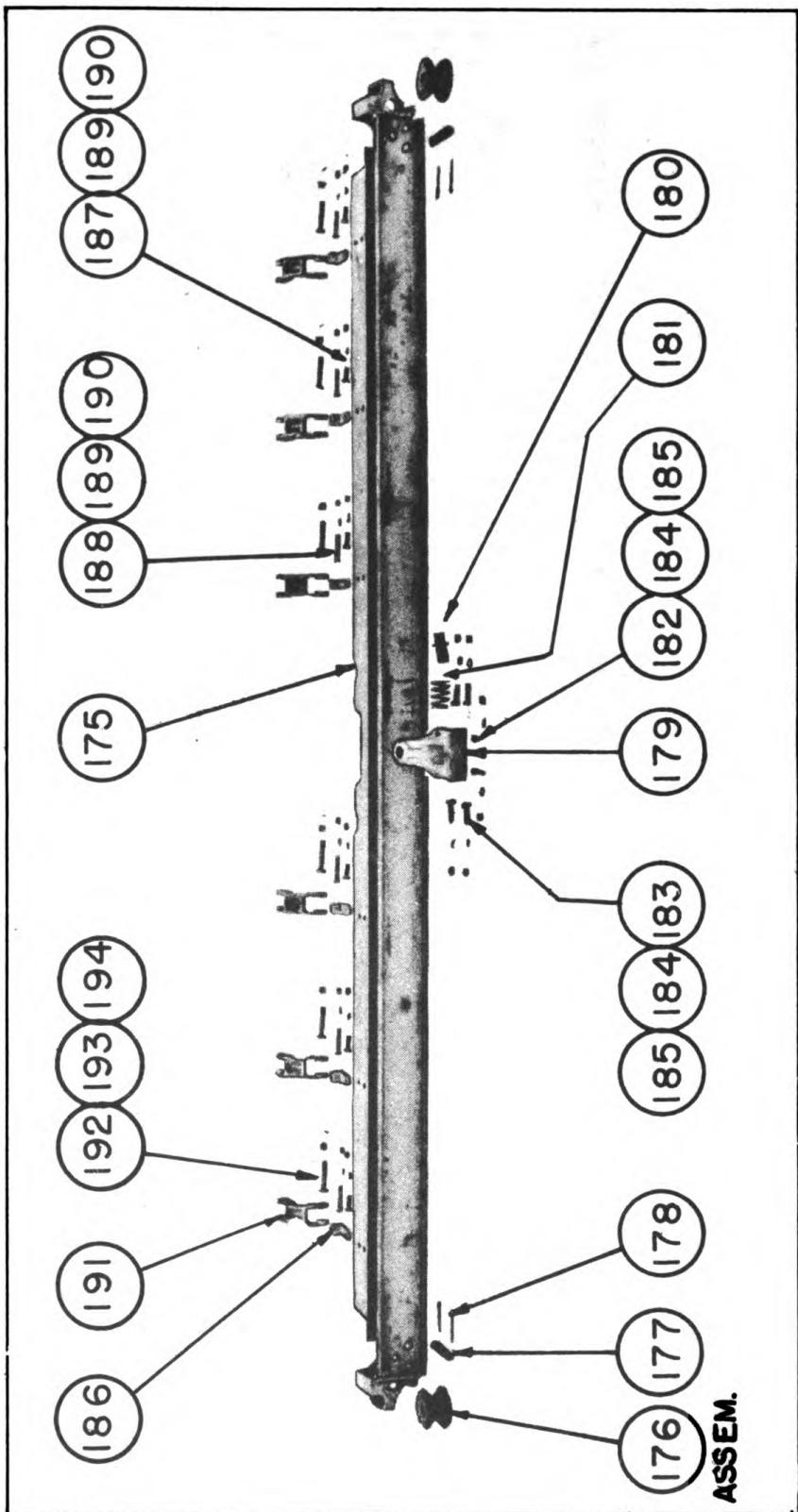


Fig. 55



See Page 78 For List

SHEAVE ASSEMBLY - DOOR

Assembly No. D-329-1A CODE: YTZYU

See Fig. 56

Part	Description	No.	Photo
Code	No.	Req'd	No.
YTZXII	D-329-1	1	195
YPKRU	D-345	2	196
YPKOJ	D-343	2	197
YXREW	25-25	1	198

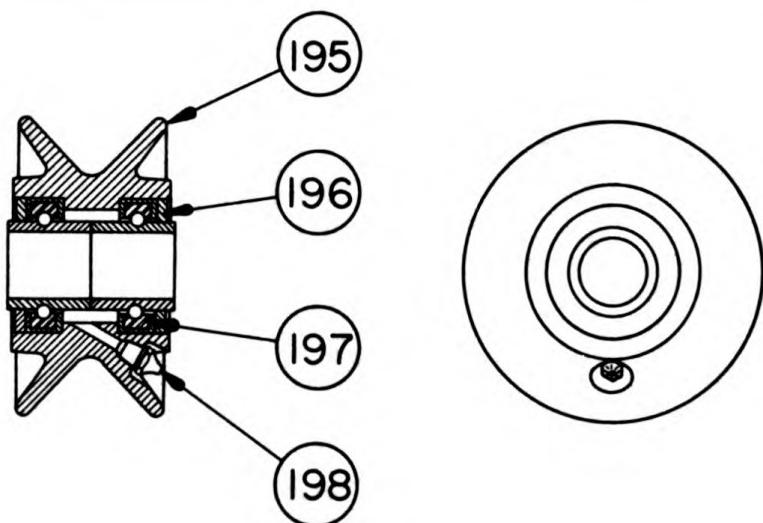
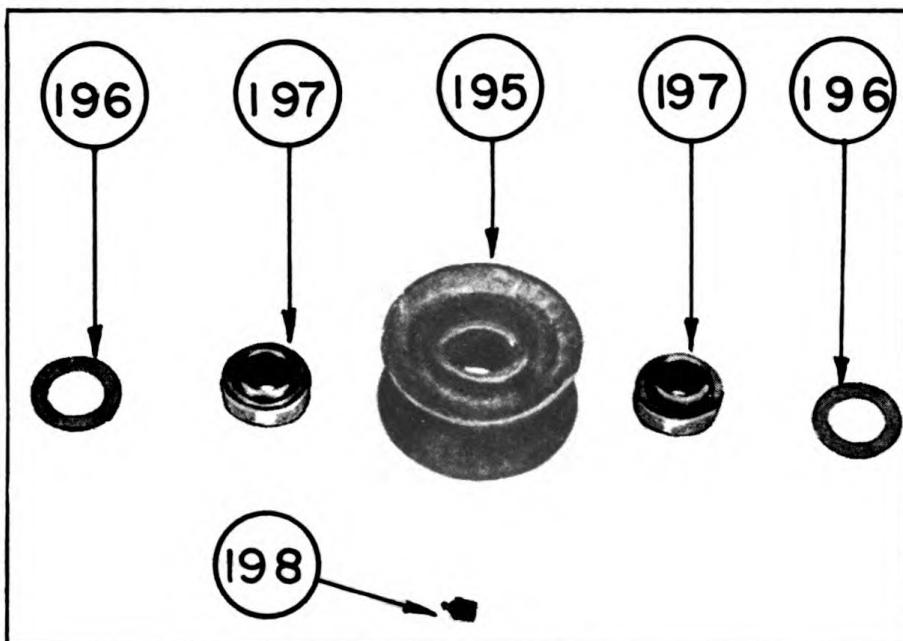


Fig. 56

STEP ASSEMBLY - REAR

Assembly No. E-350B CODE: YYHTJ

See Fig. 57

Code	Part No.	Description	No. Req'd	Photo No.
YPLHA	D-350	Step - Rear - - - - -	1	201
YYHUV	E-351-3	Bracket - Rear Step - - - - -	1	202
YBBLU	T-1507	Cap Screw - 5/8"-18 x 2 1/2" S.A.E. - - - - -	2	203
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex - - - - -	2	204
YA.JVU	T-455	Washer - 5/8" Lock - - - - -	2	205

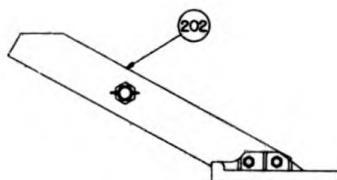
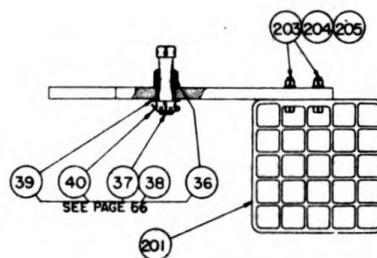
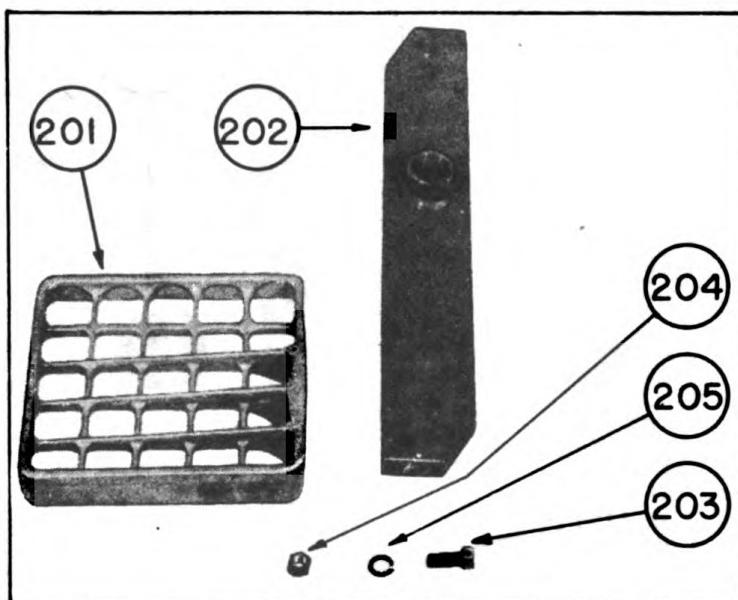


Fig. 57

SHEAVE ASSEMBLY - FRONT

Assembly No. D-326A CODE: YPCJU

See Fig. 58

Code	Part No.	Description	No. Req'd	Photo No.
YPCII	D-326	Sheave - Front -	1	210
YJKDI	10T-12	Bushing - Front Sheave -	1	211

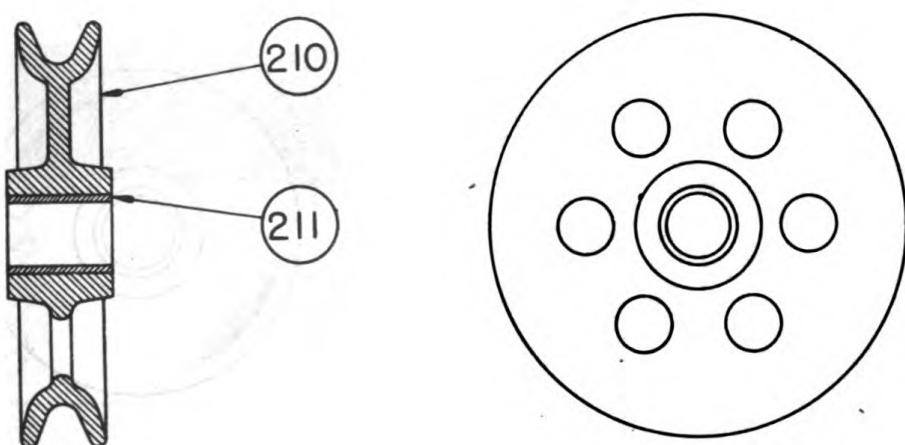
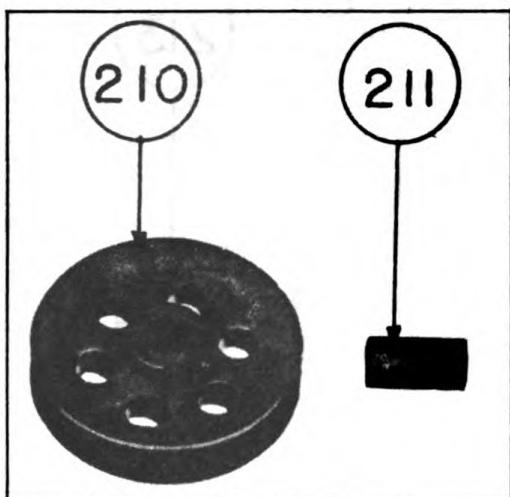


Fig. 58

SHEAVE ASSEMBLY - FRAME

Assembly No. D-329A CODE: YUABS

See Fig. 59

Code	Part No.	Description	No. Req'd	Photo No.
YUAAG	D-329	Sheave-----	1	212
YPDEX	D-335	Bushing - Sheave-----	1	213

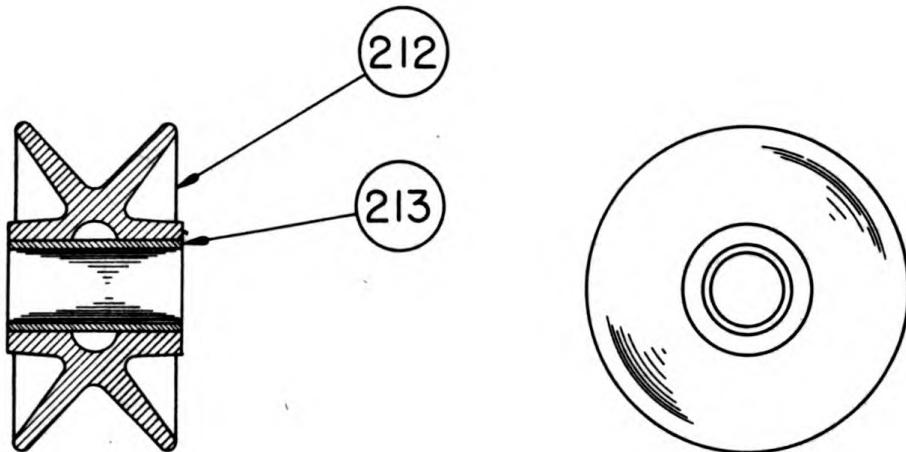
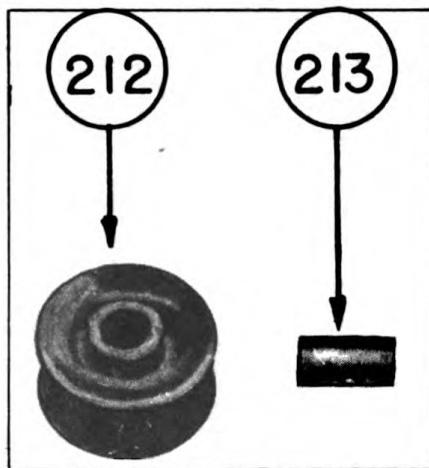


Fig. 59

MECHANISM HAND AUTOMATIC DUMP

Assembly No. E-450B CODE: YYHXH

See Fig. 60

Code	Part No.	Description	No. Req'd	Photo No.
YOKG	D-462A	Channel Assembly (See Page 86) - - - - -	1	221
YUFJE	E-60	Cap Screw - 5/8"-18 x 2 1/4" S.A.E. H.T.)	5	222
YEMJU	T-1507S	Cap Screw - 5/8"-18 x 2 1/2" S.A.E. H.T.)	1	223
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) to	6	224
YAJVU	T-455	Washer - 5/8" Lock) Body	6	225
YYHVI	E-425A	Housing Assembly - Spring (See Page 95) - - - - -	1	226
YBBAA	T-1500	Cap Screw - 5/8"-18 x 1 1/2" S.A.E.)	3	227
YFIKK	6T-1111	Cap Screw - 5/8"-18 x 1 3/4" S.A.E.)	3	228
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) to	6	229
YAJVU	T-455	Washer - 5/8" Lock) E-520	6	230
YYHT	E-451B	Control - Tractor Dumping - for Front Unit (See Page 98) - - - - -	1	231
YFIKK	6T-1111	Cap Screw - 5/8"-18 x 1 3/4" S.A.E.) E-437, E-475 & -	6	232
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) E-476 to	6	233
YAJVU	T-455	Washer - 5/8" Lock) E-520	6	234
YVPOS	C-452	Control - Tractor Dumping - for Rear Unit (See Page 100) - - - - -	1	235

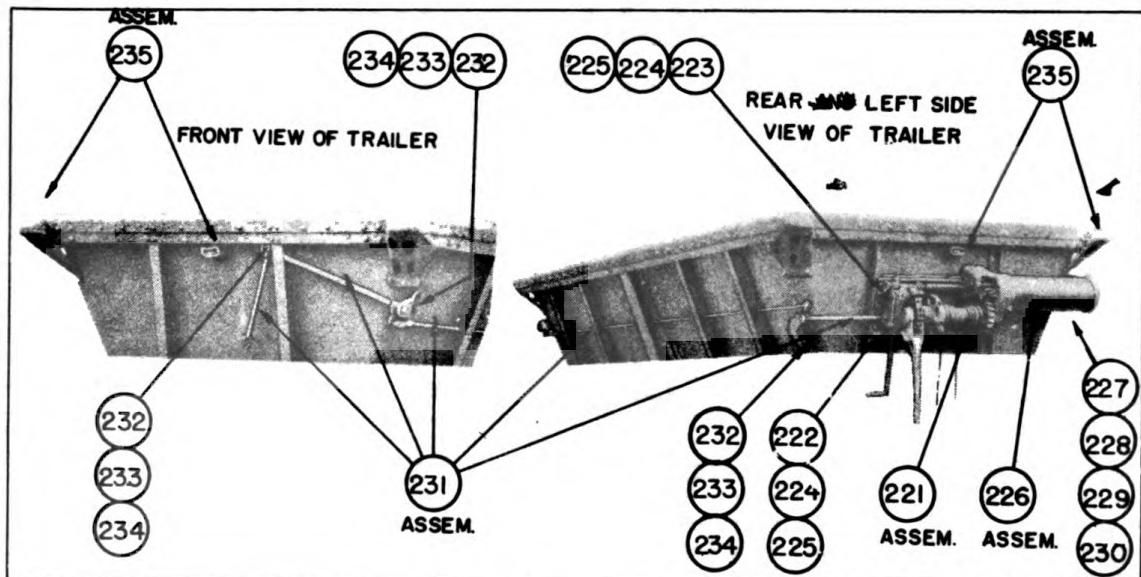


Fig. 60

CHANNEL ASSEMBLY - DUMP MECHANISM

Assembly No. D-462A CODE: YOYKG

See Page 88 & 89, Fig. 61

Code	Part No.	Description	No. Req'd	Photo No.
YWELN	D-419	Channel - Dump Mechanism	1	250
YWCOL	D-401S	Drum - Cable	1	251
YWDDE	D-402	Drum - Cable (Ratchet Type)	1	252
YPKQI	D-344	Clamp - Cable	2	253
YOAZZ	T-1490-1	Cap Screw - 1/2"-20 x 2 1/4" Special Head S.A.E.	2	254
YBBEL	T-1502	Nut - 1/2"-20 S.A.E. Hex	2	255
YADGM	T-233	Washer - 1/2" Lock	2	256
YWEDE	D-413	Shaft - Cable Drum	1	257
YDFAA	4T-27	Key - No. TX Woodruff	2	258
YWDUV	D-406A	Bracket Assembly - Bearing (See Page 93)	1	259
YOBBM	T-1744-2	Cap Screw - 7/8"-14 x 2 3/4" S.A.E. H.T.	2	260
YGFFU	7T-476-1	Nut - 7/8"-14 S.A.E. Hex	2	261
YASTA	T-754	Washer - 7/8" Lock	2	262
YWEJO	D-418A	Spacer Assembly	1	263
YPAUB	D-311	Ratchet	1	264
YPAGI	D-312C	Lever	1	265
YWGJD	D-416	Collar - Retaining	1	266
YZIK	T-1591-4	Cap Screw - 5/16"-24 x 3" S.A.E.	1	267
YBERG	T-1592	Nut - 5/16"-24 S.A.E. Hex	1	268
YADUF	T-243	Washer - 5/16" Lock	1	269
YWBYL	D-403A	Housing Assembly - Gear (See Page 94)	1	270
YOBAL	T-1744-1	Cap Screw - 7/8"-14 x 2" S.A.E. H.T.	3	271
YGFFU	7T-476-1	Nut - 7/8"-14 S.A.E. Hex	3	272
YASTA	T-754	Washer - 7/8" Lock	3	273
YWEEE	D-414	Pinion	1	274
YYIMA	T-1591-5	Cap Screw - 5/16"-24 x 2 1/2" S.A.E.	1	275
YBERG	T-1592	Nut - 5/16"-24 S.A.E. Hex	1	276
YWCED	D-408A	Gear Assembly (See Page 90)	1	277
YWEQL	D-424	Pin - Gear Retaining Washer	1	278
YWETW	D-427	Washer - Gear Retaining	1	279
YBATD	T-1493	Cap Screw - 3/4"-16 x 2 3/4" S.A.E.	1	280
YGVNY	7T-1031	Nut - 3/4"-16 S.A.E. Hex	1	281
YABBN	T-143	Washer - 3/4" Lock	1	282
YYHIO	D-811	Bracket - Trip Lever	1	283
YAVTO	T-886	Cap Screw - 5/8"-18 x 2" S.A.E.)D-811	6	284
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex) to	6	285
YAJVU	T-455	Washer - 5/8" Lock)D-419	6	286
YYHEQ	D-313C	Lever Assembly - Trip (See Page 91)	1	287
YOYGI	D-456-1	Shaft - Trip Lever	1	288
YWGJI	D-446-1	Key - Trip Lever	1	289
YPBAY	D-315	Dog - Trip Lever	1	290
YPBEW	D-316	Pin - Trip Lever Dog	1	291
YBIPJ	T-1415	Pin - 1/4" x 2 1/2" Cotter	1	292
YNOEF	D-384	Spring - Torsion	1	293
YNOGE	D-885	Bracket - Torsion Spring	1	294

CHANNEL ASSEMBLY - DUMP MECHANISM

continued:-

Code	Part No.	Description	No. Req'd	Photo No.
YYIOM	T-3117-3	Cap Screw - 5/8"-11 x 1 1/4" U.S.S. Fl. Hd. - - - - -	1	295
YAOFF	T-598	Nut - 5/8"-11 U.S.S. Hex- - - - -	1	296
YAJVU	T-455	Washer - 5/8" Lock- - - - -	1	297
YXREW	25-25	Fitting - 1/8" Push Type Straight Alemite (No. 1610) - - - - -	2	298
YOKUN	D-457	Shaft - Roller Trip Lever - - - - -	1	299
YOKVA	D-458	Coupling - Roller Trip Lever Shaft - - - - -	1	300
YBT AJ	T-1473-3	Cap Screw - 3/8"-24 x 2" S.A.E. H.T. - - - - -	2	301
YBJFO	T-1474	Nut - 3/8"-24 S.A.E. Hex- - - - -	2	302
YAKPL	T-469	Washer - 3/8" Lock- - - - -	2	303
YWCAF	D-405A	Lever Assembly - Roller Trip (See Page 92) - - - - -	1	304
YWGEF	D-445	Key - Roller Trip Lever - - - - -	1	305
YWOIO	D-404	Link - Latch- - - - -	1	306
YWEWI	D-430	Pin - Latch Link- - - - -	1	307
YADNV	T-237	Pin - 1/4" x 2" Cotter- - - - -	1	308
YPBAY	D-315	Dog - Trip Lever- - - - -	1	309
YWEVV	D-429	Pin - Trip Lever- - - - -	1	310
YADNV	T-237	Pin - 1/4" x 2" Cotter- - - - -	1	311
YPD AZ	D-333	Eyebolt - Spring Adjusting- - - - -	1	312
YPKAD	D-336	Pin - Eyebolt Pivot - - - - -	1	313
YACEZ	T-203	Pin - 3/16" x 1" Cotter - - - - -	2	314
YPDCY	D-334	Spring - Latch Link Return- - - - -	1	315
YPDYN	T-1466	Washer - 1/2" S.A.E. Plain- - - - -	1	316
YMGX	T-1502-1	Nut - 1/2"-20 S.A.E. Jam- - - - -	2	317
YNEOI	T-3164	Set Screw - 1/2"-13 x 1 3/4" Sq. Hd.- - - - -	1	318
YBAKU	T-1481	Nut - 1/2"-13 U.S.S. Jam- - - - -	1	319

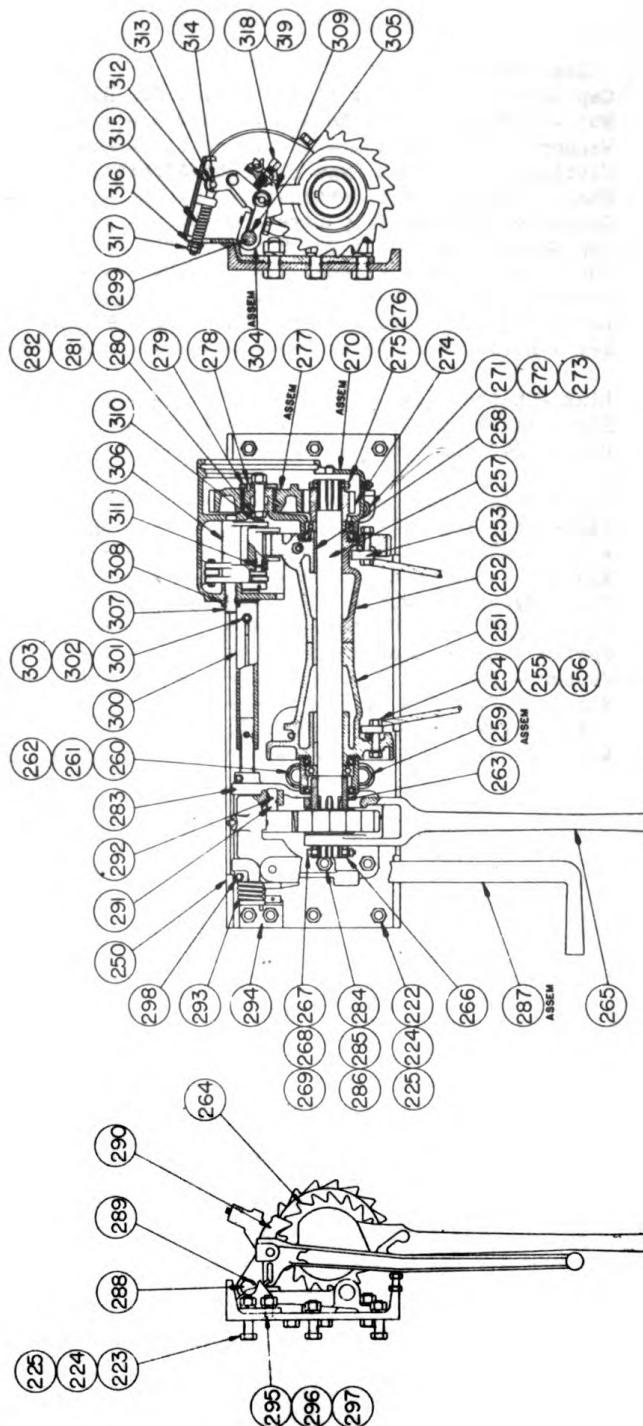
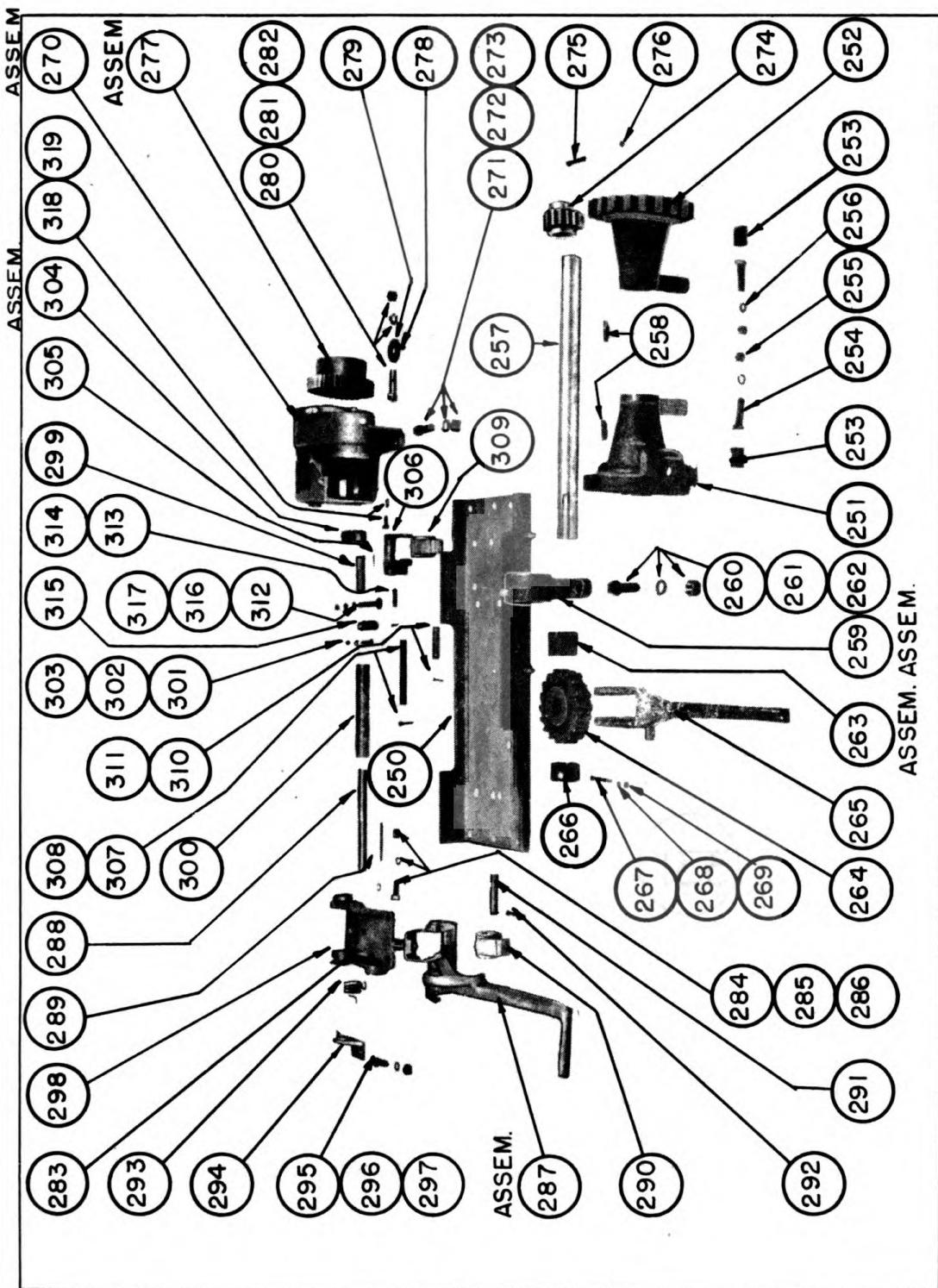


Fig. 61

See Page 86 & 87 for List



See Page 86 & 87 For List

GEAR ASSEMBLY

Assembly No. D-408A CODE: YWCED

See Fig. 62

Code	Part No.	Description	No. Req'd	Photo No.
YWDWU	D-408	Gear - - - - -	1	331
YWEMA	D-420	Bushing - Gear - - - - -	1	332

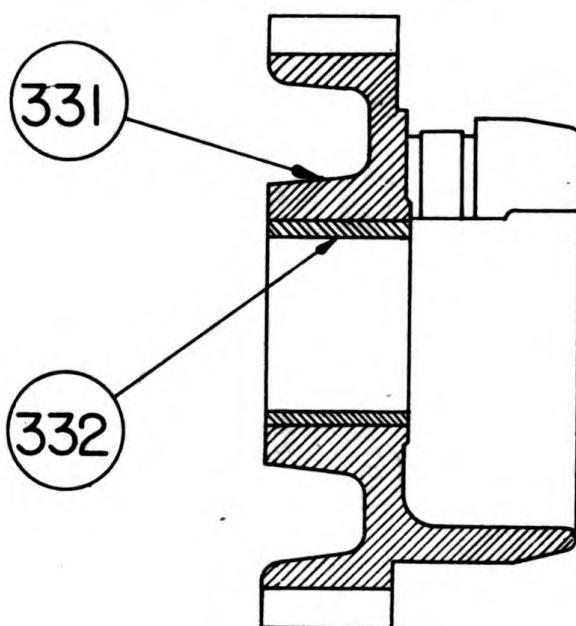
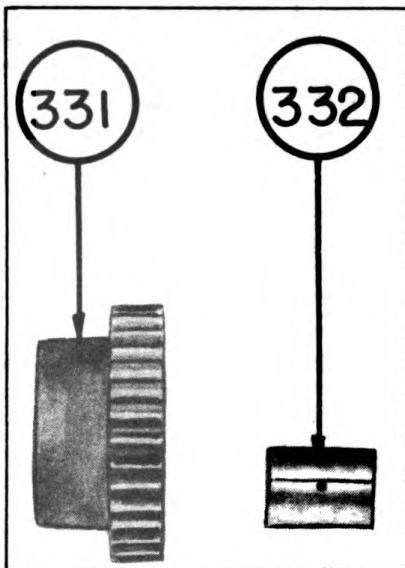


Fig. 62

LEVER ASSEMBLY - TRIP

Assembly No. D-313C CODE: YYHHEQ

See Fig. 63

Code	Part No.	Description	No. Req'd	Photo No.
YYHDE	D-313B	Lever - Trip - - - - -	1	340
YIOAH	D-823	Plunger - Trip Lever - - - - -	1	341
YLJID	PA-423	Spring - Plunger - - - - -	1	342
YACEZ	T-203	Pin - 3/16" x 1" Cotter - - - - -	1	343
YBCTF	T-154	Cap Screw - 1/2"-20 x 1 3/4" S.A.E. - - - - -	1	344
YBBEL	T-1502	Nut - 1/2"-20 S.A.E. Hex - - - - -	1	345

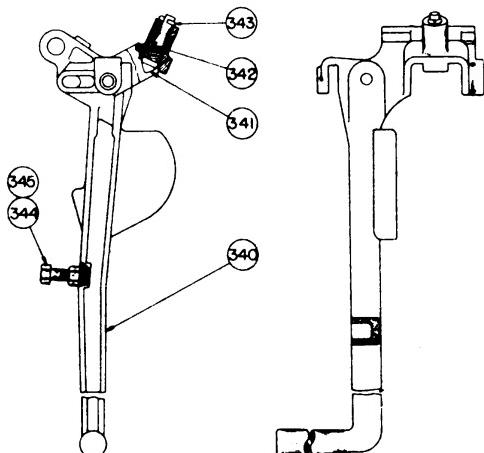
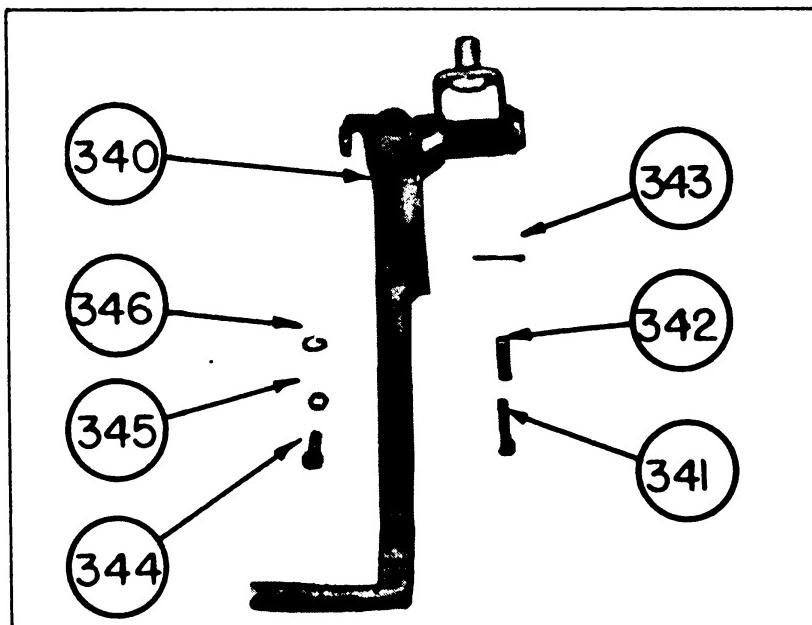


Fig. 63

LEVER ASSEMBLY - ROLLER TRIP

Assembly No. D-405A CODE: YWCAF

See Fig. 64

Code	Part No.	Description	No. Req'd	Photo No.
YWDLA	D-405	Lever - Roller Trip	1	350
YWEXU	D-431	Roller - Trip Lever	1	351
YWEYH	D-432	Pin - Roller	1	352
YNAYB	T-1404-1	Pin - 3/16" x 1 1/2" Cotter	1	353
YBCTE	T-1543	Cap Screw - 1/2"-20 x 1 3/4" S.A.E.	1	354
YADGM	T-233	Washer - 1/2" Lock	1	355

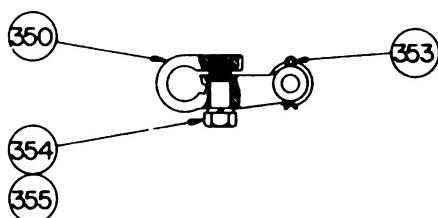
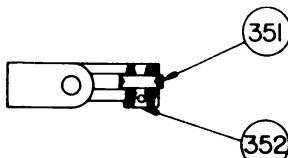
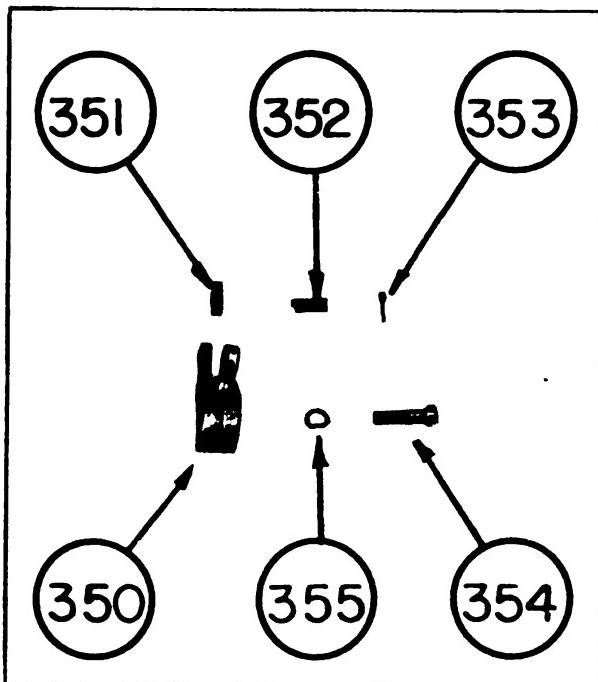


Fig. 64

BRACKET ASSEMBLY - BEARING

Assembly No. D-406A CODE: YWDUV

See Fig. 65

Code	Part No.	Description	No. Req'd	Photo No.
YWDUY	D-406	Bracket - Bearing	1	356
YRHI	25-26	Fitting - 1/4" Push Type Straight Alemite (No. 1627)	1	357
YWEF	D-412	Bearing - Single Row Ball (No. 209)	1	358
YWENZ	D-421	Seal - Oil (No. 354216)	2	359

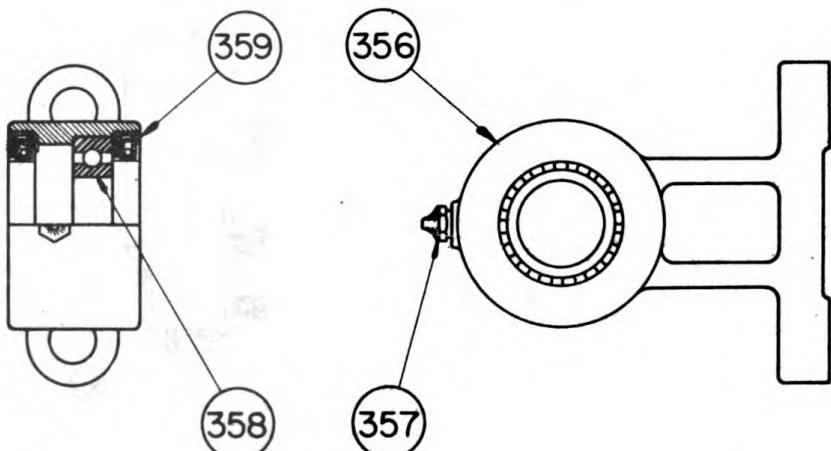
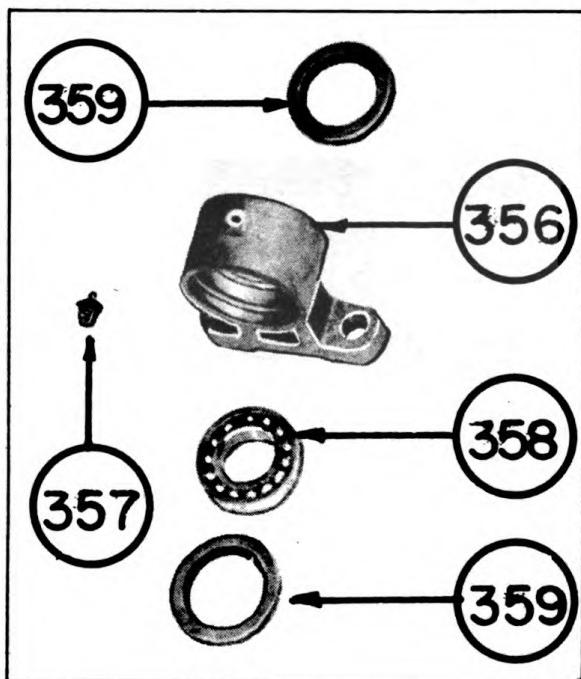


Fig. 65

643709 O - 45 - 7

HOUSING ASSEMBLY - GEAR

Assembly No. D-403A CODE: YWBYS

See Fig. 66

Code	Part No.	Description	No. Req'd	Photo No.
YWDEQ	D-403	Housing - Gear -	1	360
YWECF	D-412	Bearing - Single Row Ball (No. 209)	1	361
YWENZ	D-421	Seal - Oil (No. 354216)	1	362
YKRHI	25-26	Fitting - 1/4" Push Type Straight Alemite (No. 1627)	2	363
YXWIK	23-2	Plug - 1/4" Pipe	2	364

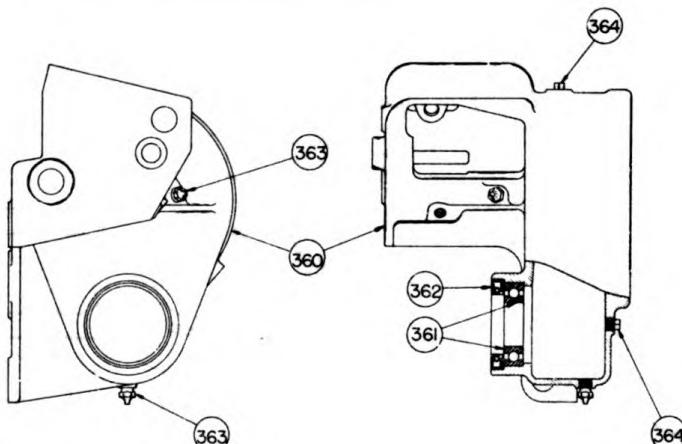
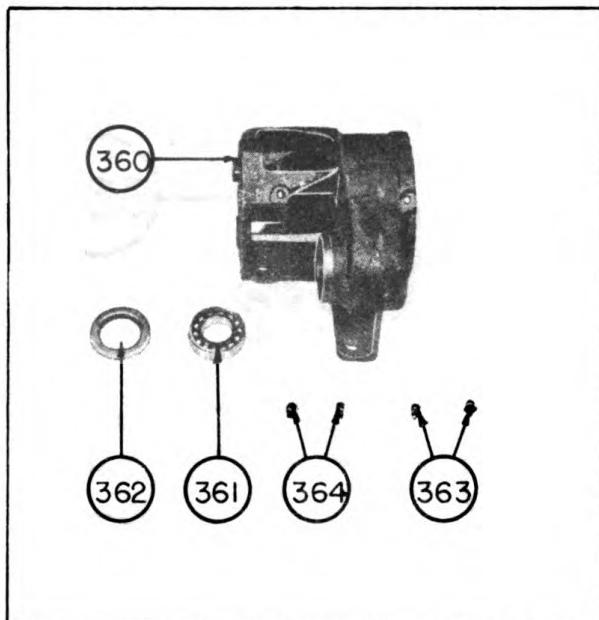


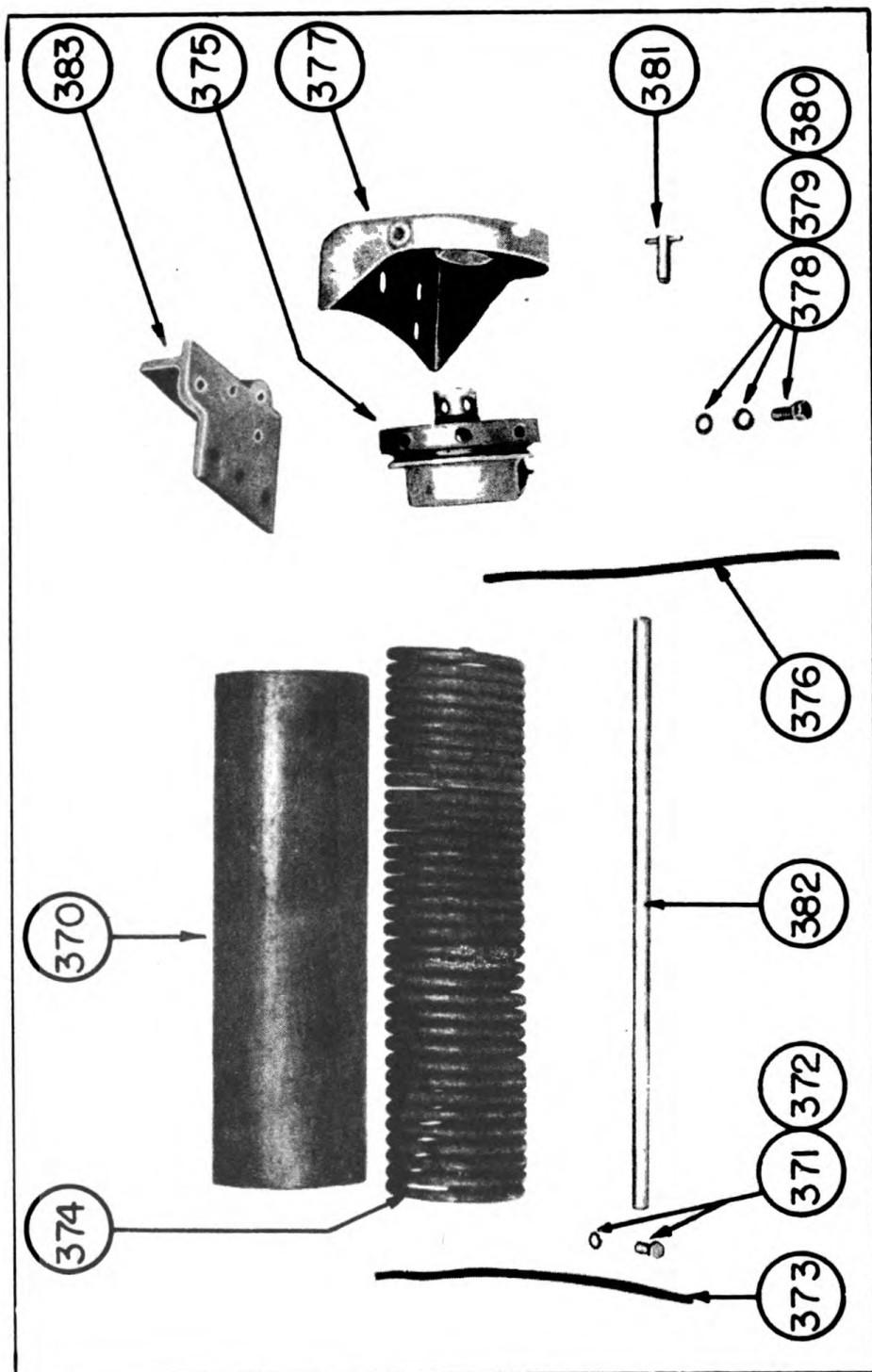
Fig. 66

HOUSING ASSEMBLY - SPRING

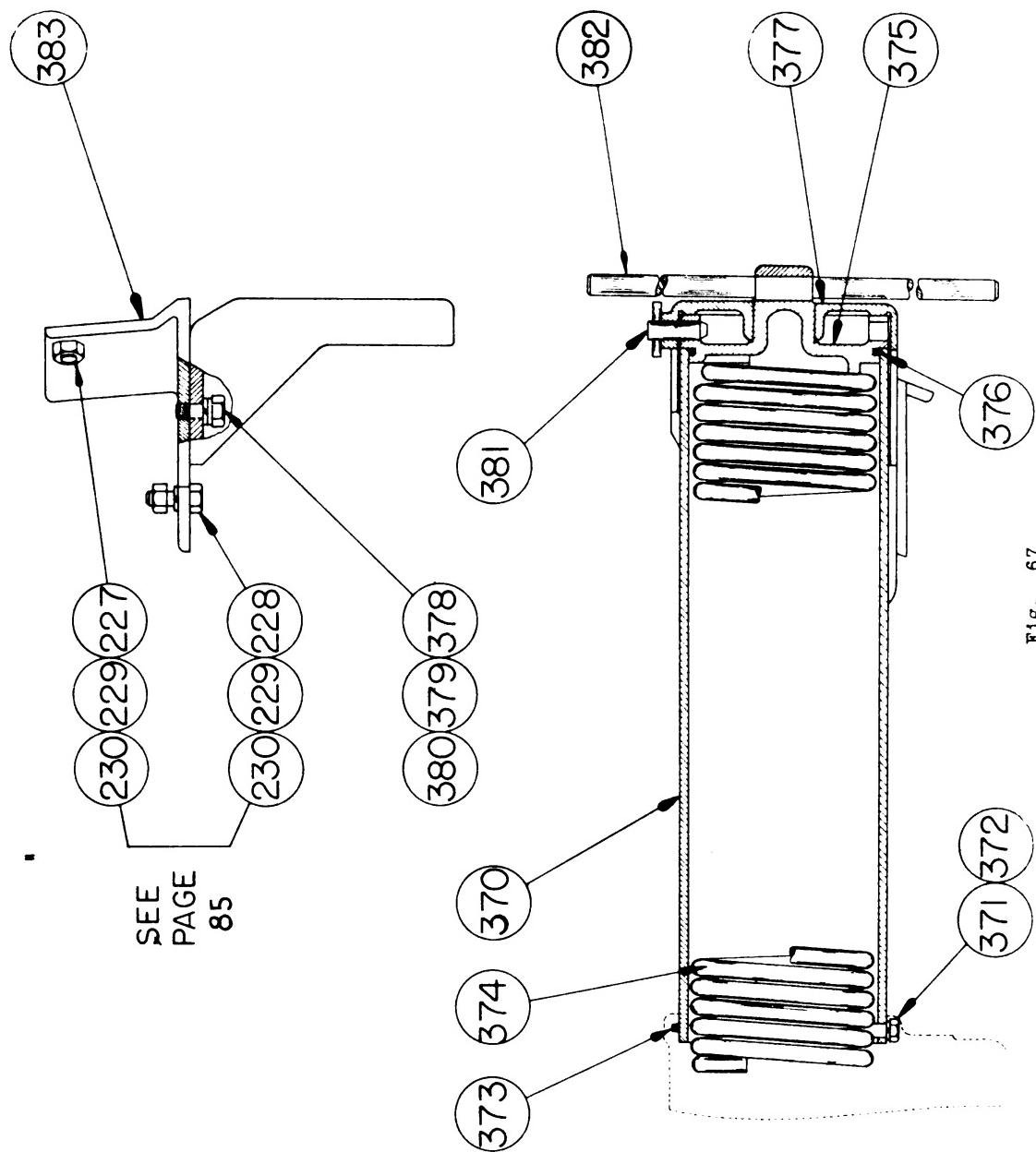
Assembly No. E-425A CODE: YYHVI

See Page 96 & 97 Fig. 67

Code	Part No.	Description	No. Req'd	Photo No.
YWERX	D-425	Housing - Spring- - - - -	1	370
YPDRE	T-1462	Cap Screw - 1/2"-13 x 1 1/4" U.S.S. - - - - -	1	371
YADGM	T-233	Washer - 1/2" Lock- - - - -	1	372
YWEUJ	D-428	Washer - Gear Housing Felt- - - - -	1	373
YVNEW	C-415	Spring - Torsion - - - - -	1	374
YWDVI	D-407	Collar - Latch- - - - -	1	375
YWBUU	D-428-1	Washer - Latch Collar Felt- - - - -	1	376
YWDYT	D-409	Bracket - Spring- - - - -	1	377
YMFOK	T-1500-1	Cap Screw - 5/8"-18 x 1 1/4" S.A.E. - - - - -	4	378
YANLO	T-583	Washer - 5/8" S.A.E. Plain- - - - -	4	379
YAJVU	T-455	Washer - 5/8" Lock- - - - -	4	380
YWGRY	D-447A	Pin - Spring Latch Collar - - - - -	1	381
YWGOA	D-449	bar - Spring Adjusting- - - - -	1	382
YYHZG	E-474	Support - Spring Bracket- - - - -	1	383



See Page 95 For List



See Page 95 For List

CONTROL - TRACTOR DUMPING - For Front Unit

Assembly No. E-451B CODE: YYHYT

See Page 99, Fig. 68

Code	Part No.	Description	No. Req'd	Photo No.
YWFER	D-435	Link - Front Control- - - - -	1	400
YWEYH	D-432	Pin - Link - - - - -	3	401
YNAYB	T-1404-1	Pin - 3/16" x 1 1/2" Cotter - - - - -	3	402
YPVUY	E-441	Shaft - Rear - - - - -	1	403
YWDIA	D-405	Lever - Roller Trip - - - - -	1	404
YWCUI	D-405-1	Lever - Connecting Rod- - - - -	1	405
YWGEF	D-445	Key - - - - -	2	406
YBCTE	T-1543	Cap Screw - 1/2"-20 x 1 3/4" S.A.E. - - - - -	2	407
YADGM	T-233	Washer - 1/2" Lock- - - - -	2	408
YYHWU	E-437	Bearing - Front Shaft - - - - -	1	409
YYIAG	E-475	Bracket - Front Shaft - - - - -	1	410
YYIBS	E-476	Bracket - Rear Shaft- - - - -	1	411
YOBFK	T-1734-5	Yoke - 5/8" S.A.E. Adjustable - - - - -	1	412
YMEOW	T-1712-1	Pin - 5/8" S.A.E. Rod End - - - - -	1	413
YACEZ	T-203	Pin - 3/16" x 1" Cotter - - - - -	1	414
YEMEN	5T-558	Nut - 5/8"-18 S.A.E. Hex- - - - -	1	415
YPVYW	E-442	Shaft - Front - - - - -	1	416
YBIPJ	T-1415	Pin - 1/4" x 2 1/2" Cotter- - - - -	2	417
YWFYU	D-444	Lever - Tractor Dumping Control Inner - - - - -	1	418
YWGAH	D-444-1	Lever - Tractor Dumping Control Outer - - - - -	1	419
YMKER	T-1470	Cap Screw - 3/8"-16 x 1 3/4" U.S.S. - - - - -	2	420
YAKPL	T-469	Washer - 3/8" Lock- - - - -	2	421
YWGEF	D-445	Key - - - - -	2	422
YAFTT	T-333	Shackle - 3/8" Anchor - - - - -	1	423
YULBL	E-473	Connecting Rod- - - - -	1	424
YYMKD	E-867-1	Rope - Front Control - - - - -	1	

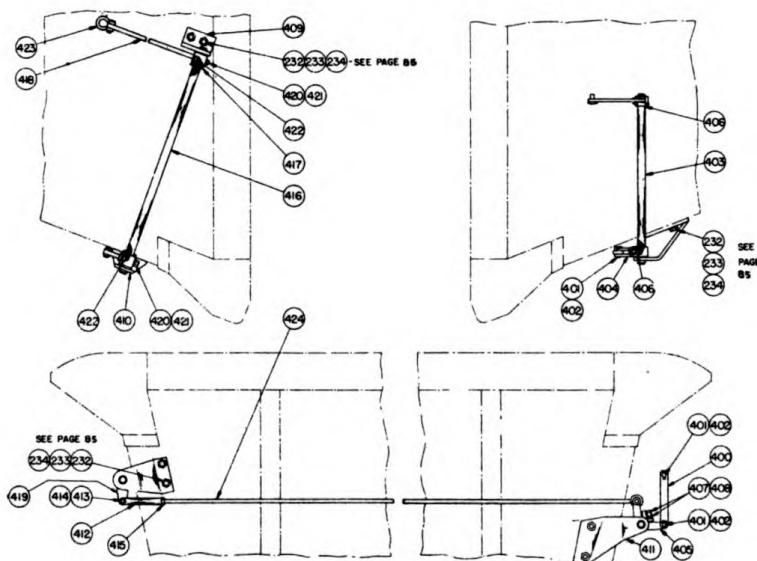
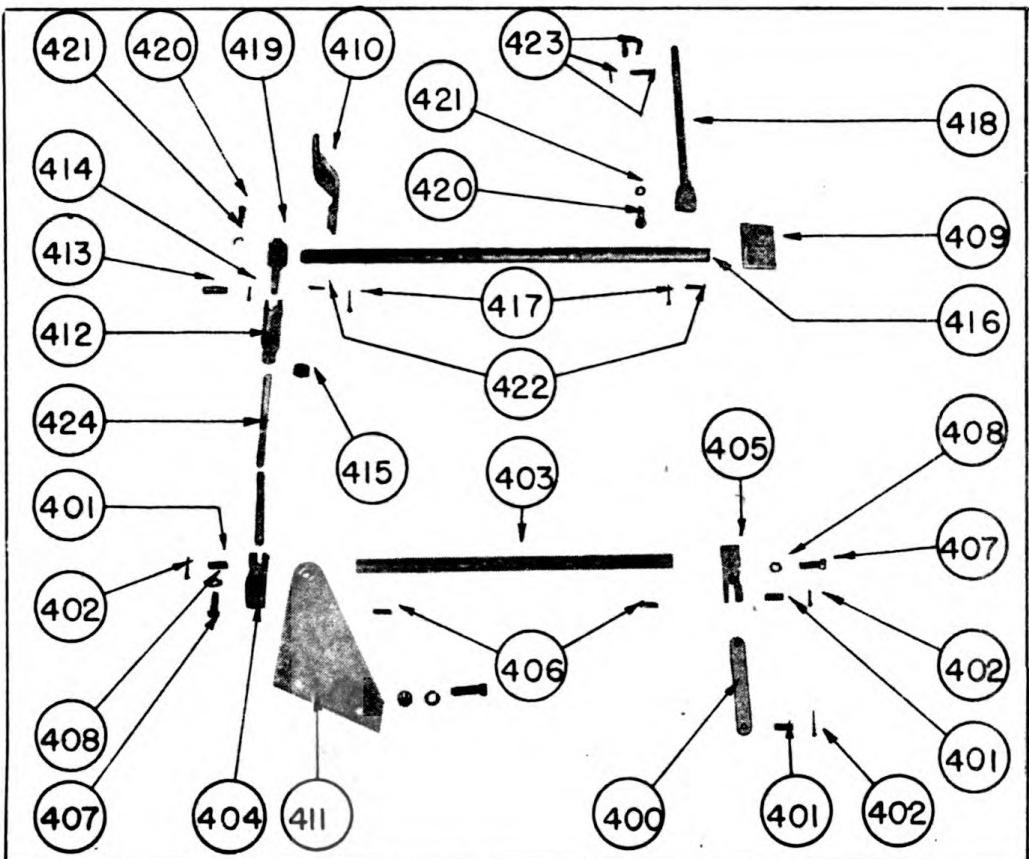


Fig. 68

CONTROL - TRACTOR DUMPING - For Rear Unit

Assembly No. C-452 CODE: YVPOS

See Page 101, Fig. 69

Code	Part No.	Description	No. Req'd	Photo No.
YXNE	D-454A	Bracket Assembly - Rope Sheave (See Page 102)	2	430
YBBDY	T-1501	Cap Screw - 1/2"-20 x 1 1/2" S.A.E.)D-454A	4	431
YBBEL	T-1502	Nut - 1/2"-20 S.A.E. Hex) to	4	432
YADGM	T-233	Washer - 1/2" Lock)E-520	4	433
YXQP	D-453	Sheave - Rope -----	2	434
YMEZE	T-1447-1	Cap Screw - 1/2"-20 x 3 1/2" S.A.E.)D-453	2	435
YBBEL	T-1502	Nut - 1/2"-20 S.A.E. Hex) to	2	436
YADGM	T-233	Washer - 1/2" Lock)E-520	2	437
YYMLP	E-867-2	Rope - Rear Control (used only in tandem operation)	1	438

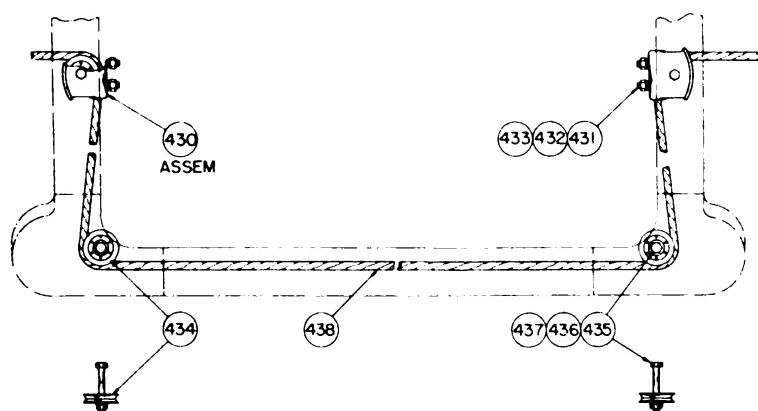
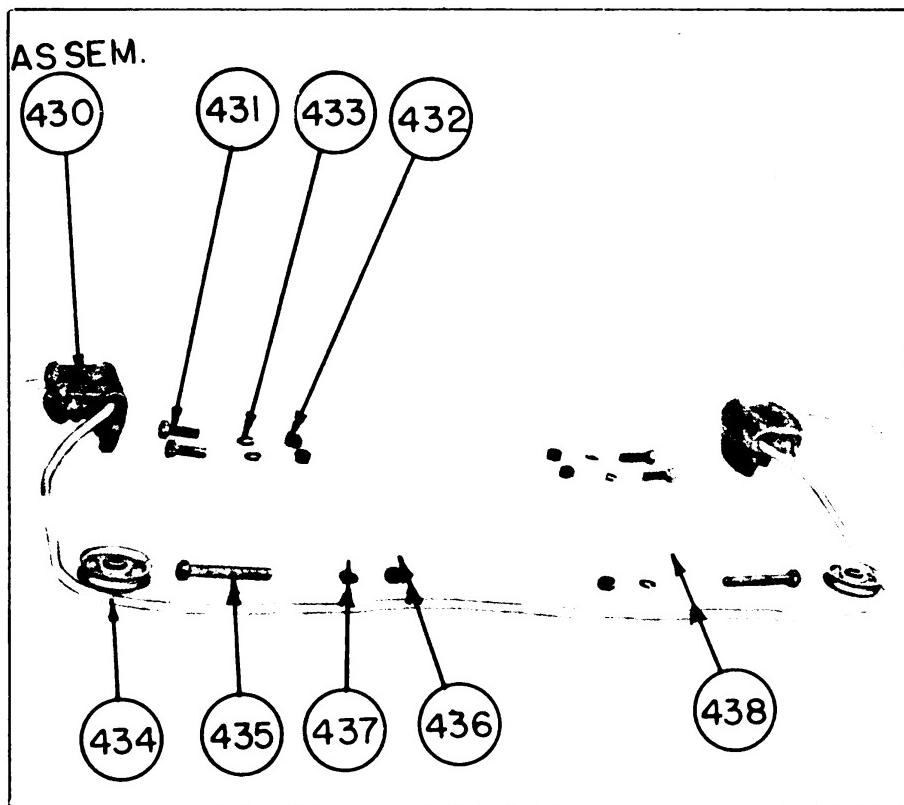


Fig. 69

BRACKET ASSEMBLY - ROPE SHEAVE

Assembly No. D-454A CODE: YOXNE

See Fig. 70

Code	Part No.
YOXRC	D-454
YOXQP	D-453
YBAQR	T-1490
YBBEL	T-1502
YADGM	T-233

Description	No. Req'd	Photo No.
Bracket - Rope Sheave - - - - -	1	440
Sheave - Rope - - - - -	1	441
Cap Screw - 1/2"-20 x 2 1/4" S.A.E. - - - - -	1	442
Nut - 1/2"-20 S.A.E. Hex- - - - -	1	443
Washer - 1/2" Lock- - - - -	1	444

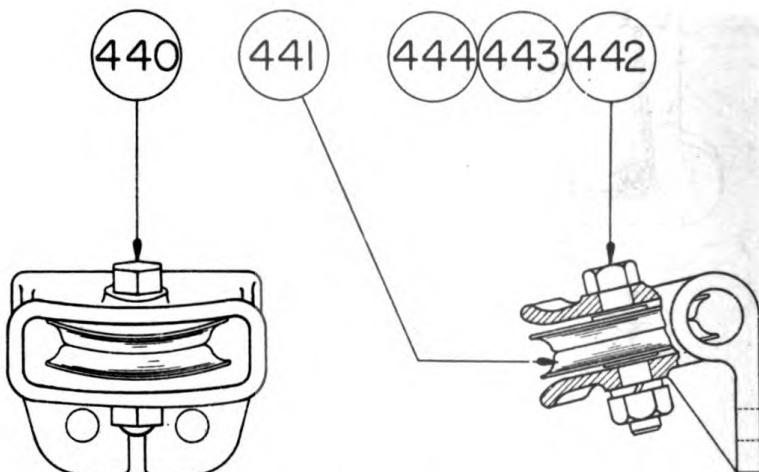
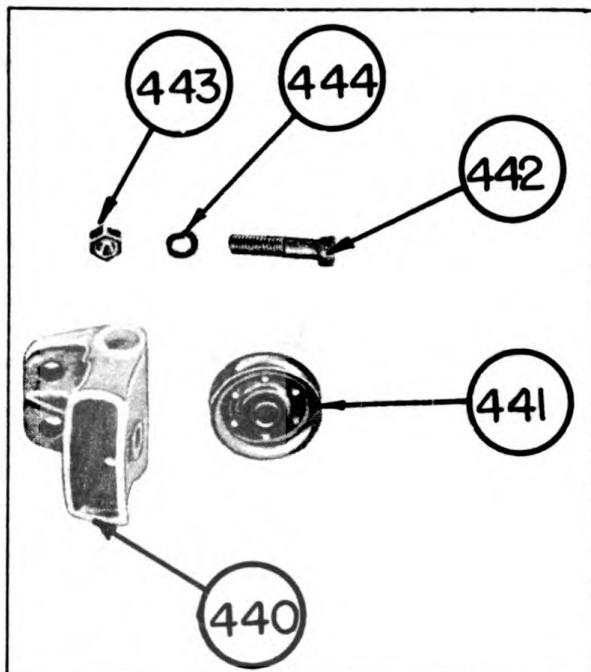


Fig. 70

WHEELS - ATHEY FORGED-TRAK (PAIR)

Assembly No. 7E-2 CODE: YUDMO

Code	Part No.	Description	No.	Photo Req'd	No.
YWAXS	7E-4	Rocker Beam & Wheel Assembly (Pair) - - - - -	1		
YUPHK	7E-51	Track Assembly (Pair) - - - - -		1	

WHEEL - ATHEY FORGED-TRAK (ONE ONLY)

Assembly No. 7E-1 CODE: YYMOB

See Fig. 71

YWAWG	7E-3	Rocker Beam & Wheel Assembly (One Only) (See Page 104)	1
YMPN	7E-50	Track Assembly (One Only) (See Page 106) - - - - -	1

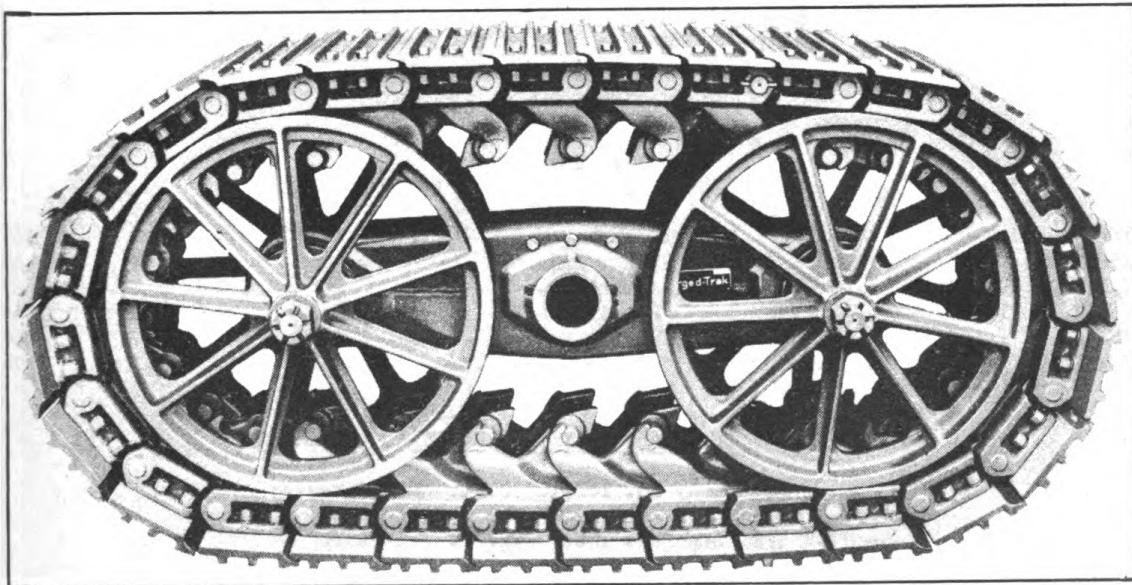


Fig. 71

ROCKER BEAM & WHEEL ASSEMBLY (ONE ONLY)

Assembly No. 7E-3 CODE: YWAWG

See Page 105, Fig. 72

Code	Part No.	Description	No. Req'd	Photo No.
YUGEH	E-5A	Beam Assembly - Rocker (See List Below) - - - - -	1	450
YUDCT	E-18	Plate - Name - - - - -	1	451
YCSSES	3T-23	Screw - Name Plate- - - - -	2	452
YSMIK	18T-8	Spindle Assembly - Track Wheel (See List Below) - - - - -	2	453
YSMNU	18T-10	Cage Assembly - Bearing (See List Below)- - - - -	4	454
YSNAO	18T-15	Pin - Dowel - - - - -	8	455
YSMZD	18T-14	Retainer - Dowel Pin- - - - -	8	456
YJLQN	10T-77	Shim .010" - - - - -	16	457
YDNZ	18T-17	Screw - Bearing Cage Cap- - - - -	24	458
YADGM	T-233	Washer - 1/2" Lock- - - - -	8	459
YJJSA	10T-81	Wire - Cap Screw Lock - - - - -	4	460
YUCZU	E-16-1	Wheel - Track - - - - -	4	461

BEAM ASSEMBLY - ROCKER

Assembly No. E-5A CODE: YUGEH

See Page 105, Fig. 72

YUGFT	E-5	Beam - Rocker - - - - -	1	462
YSMEM	18T-6	Bushing - Rocker Beam - - - - -	1	463
YXQZY	25-3	Fitting - 3/8" Industrial Alemite (No. 1822) - - - - -	3	464

SPINDLE ASSEMBLY - TRACK WHEEL

Assembly No. 18T-8 CODE: YSMIK

See Page 105, Fig. 72

YSMMI	18T-9	Spindle - Track Wheel - - - - -	1	465
YSMYC	18T-13	Bearing - Single Row Ball (No. 7314) - - - - -	2	466
YJIMP	10T-73	Key - Wheel Retaining - - - - -	2	467
YFWQY	7T-13	Washer - Wheel Retaining- - - - -	2	468
YFWUW	7T-14	Nut - Wheel Retaining - - - - -	2	469
YFWXI	7T-15	Pin - 3/8" x 3" Cotter- - - - -	2	470

CAGE ASSEMBLY - BEARING

Assembly No. 18T-10 CODE: YSMNU

See Page 105, Fig. 72

YSMOH	18T-11	Cage - Bearing - - - - -	1	471
YSMUE	18T-12	Seal - Oil (No. 387224) - - - - -	1	472

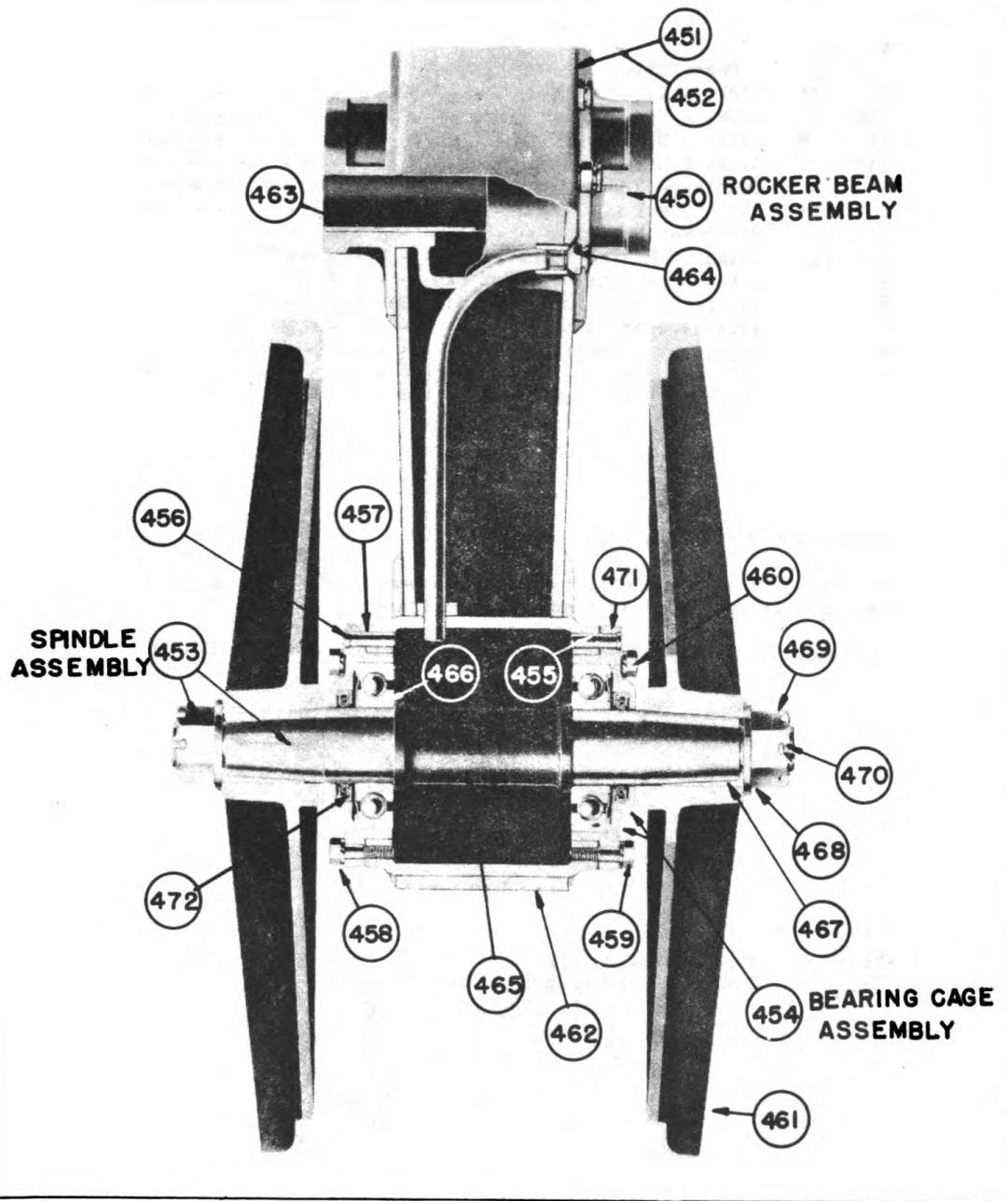


Fig. 72

TRACK ASSEMBLY (ONE ONLY)

Assembly No. 7E-50 CODE: YYMPN

See Page 107, Fig. 73

Code	Part No.	Description	No. Req'd	Photo No.
YFSBE	7E-52	*	Link, R.H. - Track- - - - -	27
YFSEP	7E-52M		Link, R.H. - Master Track - - - - -	1
YFSYS	7E-53	*	Link, L.H. - Track- - - - -	27
YFTAF	7E-53M		Link, L.H. - Master Track- - - - -	1
YUFET	E-55		Bushing - Track Pin - - - - -	28
YUFGF	E-56	**	Pin - Track - - - - -	27
YUFGS	E-57		Pin - Master Track - - - - -	1
YUFHF	E-58	***	Collar - Master Track Pin - - - - -	2
YUFLD	E-62		Retainer - Master Track Pin - - - - -	2
YUGGG	5E-83		Pin Set - Floating Type Lock (See List Below) - - - - -	28
YYMQA	E-61		Plate - Track (20" H.T.) - - - - -	28
YUFJE	E-60		Cap Screw - Special - - - - -	112
YFTIB	7E-66		Nut - Special - - - - -	112
YUCOG	E-78		Washer - 5/8" Lock- - - - -	112
				494

* Replacement Track Link Unit - See Page 108

** When E-56 Track Pin is ordered for replacement - E-76 Replacement Track Pin is furnished in place of E-56 Track Pin.

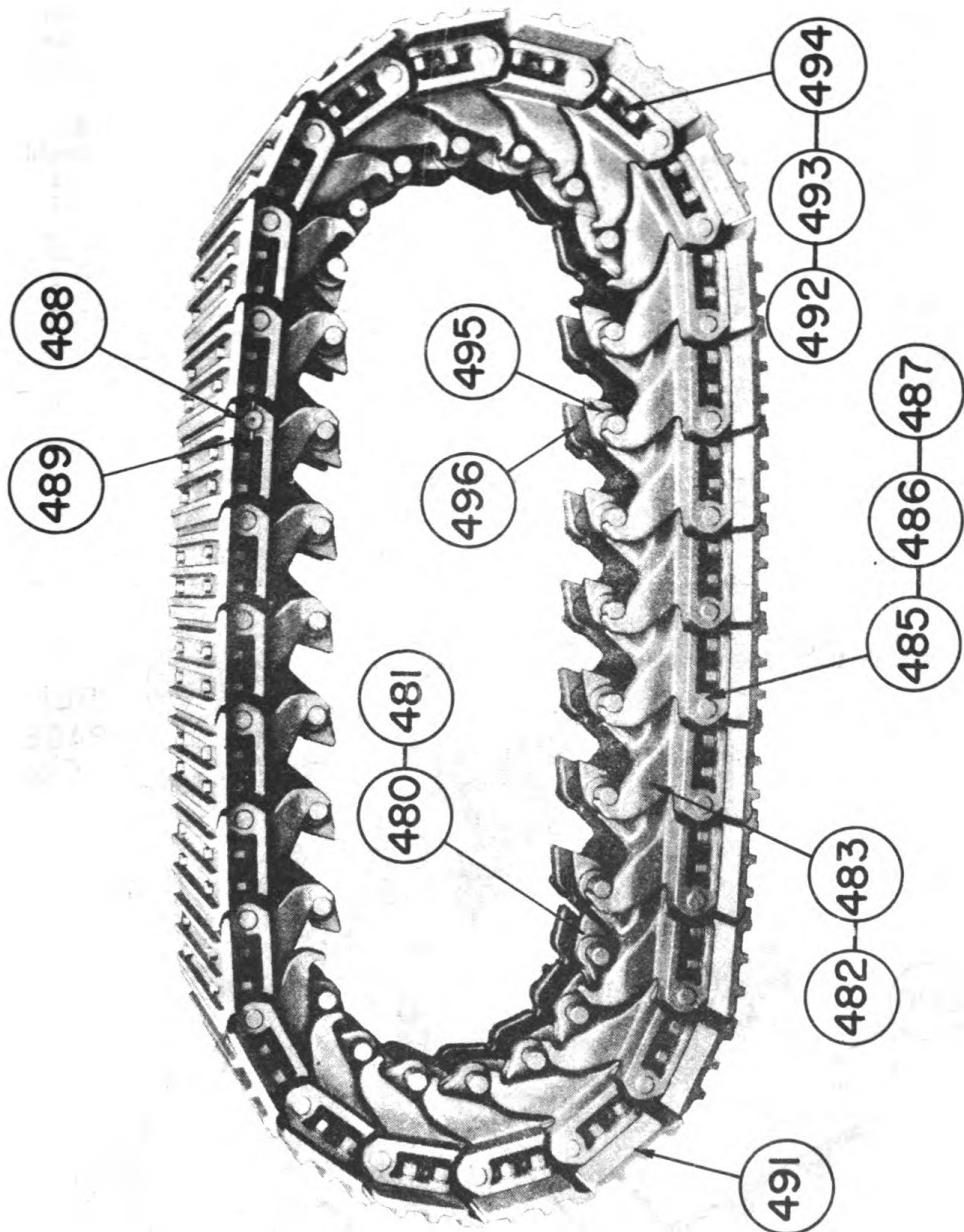
*** Furnished only on Wheel Serial No.'s Up to and Including 7E-1016.

PIN SET - FLOATING TYPE LOCK

Assembly No. 5E-83 CODE: YUGGG

See Page 107, Fig. 73

YUGHS	5E-81	Pin - Floating Type Lock- - - - -	1	495
YUGIF	5E-82	Bushing - Floating Type Lock Pin- - - - -	1	496



LINK UNIT - REPLACEMENT TRACK (WITH Track Plate)

Assembly No. 7E-72 CODE: YYMSM

LINK UNIT - REPLACEMENT TRACK (WITHOUT Track Plate)

Assembly No. 7E-73 CODE: YFTYG

See Fig. 74

Part Code	Part No.	Description	No. Req'd	Photo No.
YFSBE	7E-52	* Link, R.H. - Track- - - - -	1	500
YFSYS	7E-53	* Link, L.H. - Track- - - - -	1	501
YUFET	E-55	Bushing - Track Pin - - - - -	1	502
YUBYU	E-76	Pin - Replacement Track - - - - -	2	503
YUFHF	E-58	** Collar - Master Track Pin - - - - -	2	504
YUGGG	5E-83	Pin Set - Floating Type Lock (See Page 106) - - - - -	1	
YYMQA	E-61	Plate - Track (20" H.T.) (For 7E-72 Only) - - - - -	4	506
YUFJE	E-60	Cap Screw - Special - - - - -	4	507
YFTIB	7E-66	Nut - Special - - - - -	4	508
YUCCG	E-78	Washer - 5/8" Lock- - - - -	4	509

* Track Link, R.H. & L.H. furnished assembled with E-55 Track Pin Bushing & 5E-83 Floating Type Lock Pin Set

** Furnished only on Wheel Serial No.'s Up to and Including 7E-1016.

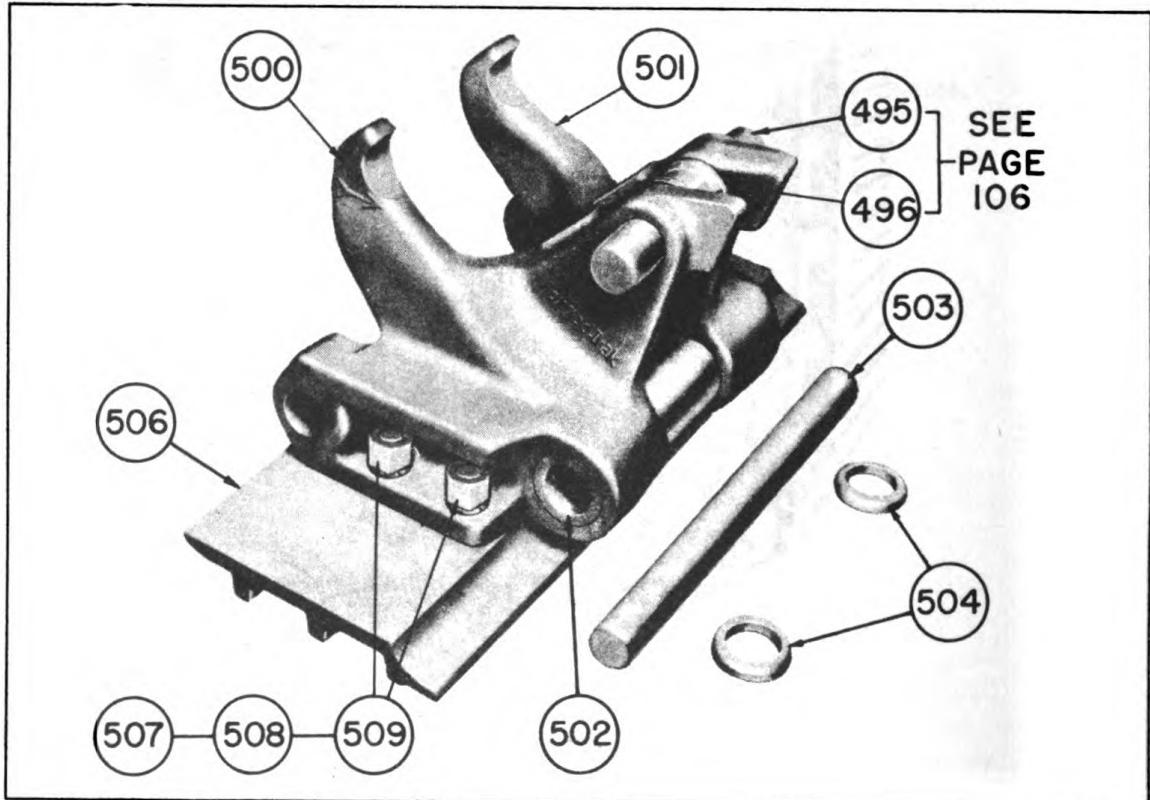


Fig. 74

GREASING EQUIPMENT AND TOOLS

Tools Furnished as Regular Equipment with 1 or 2 Pairs
of Athey Forged-Trak Wheels Model 7E (20-Ton)

See Fig. 75

Code	Part No.	Description	No. Req'd	Photo No.
YXSEK	26-3	Wrench - Hexagon - for Track Wheel Spindle Nut- - - - -		515

TOOLS FURNISHED ON SPECIAL ORDER

YHINE	8T-94	Wrench - Speed - - - - -	516
YXZUS	26-54	Wrench - Engineer's - - - - -	517
YXZKE	26-55	Wrench - Offset Socket- - - - -	518
YYABO	26-58	Sledge - 12 Pound - - - - -	519
YYACB	26-59	Bar - Bucking - - - - -	520
YSFYF	17T-25	Compressor - Alemite Giant Button Head Volume, 28 lbs. capacity (Part No. 1001) and No. 5123 5' Rubber Hose with Giant Button Head Coupling - - - - -	521
TYALW	26-76	Pin - Drift - - - - -	522
YXPSO	26-103	Puller - Track Wheel ("Knock-Out" Type) - - - - -	523

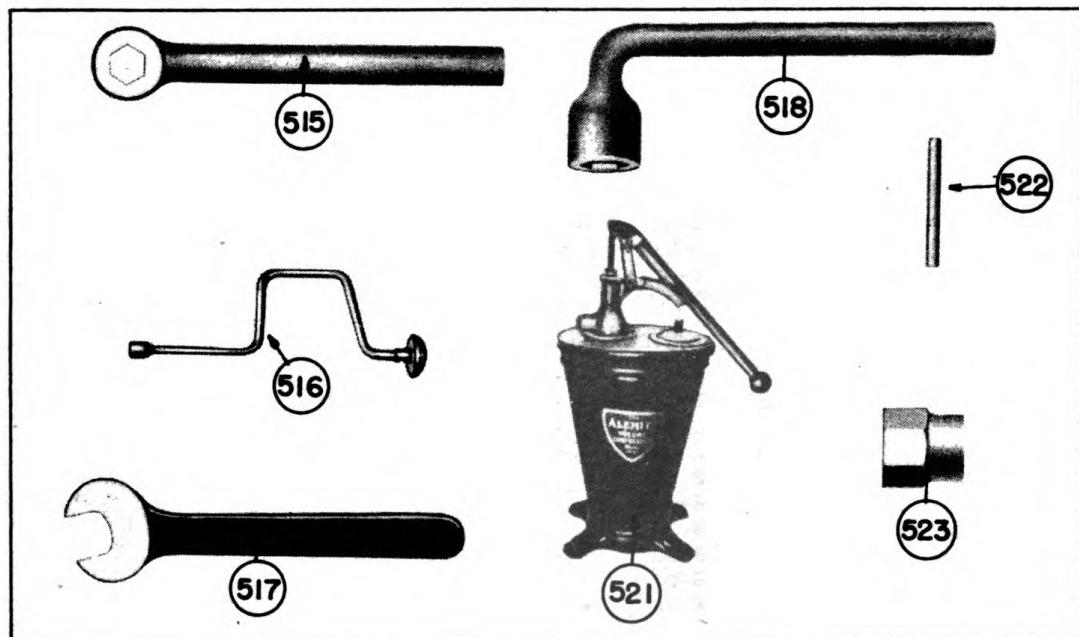


Fig. 75

NUMERICAL INDEX

<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>
C-415	95	D-414	86	E-150A	66, 70
C-452	85, 100	D-416	86	E-151A	70, 72
		D-418A	86	E-152	72
		D-419	86	E-152A	72
D-103	72	D-420	90	E-157	72
D-105	66	D-421	93, 94	E-203	78
D-108	72	D-424	86	E-322	67
D-109	72	D-425	95	E-350B	66, 82
D-118	67	D-427	86	E-351-3	82
D-131-1	66	D-428	95	E-425A	85, 95
D-200	78	D-428-1	95	E-437	98
D-201	78	D-429	87	E-441	98
D-204	78	D-430	87	E-442	98
D-205	78	D-431	92	E-450B	67, 85
D-311	86	D-432	92, 98	E-451B	95, 98
D-312C	86	D-435	98	E-473	98
D-313B	91	D-444	98	E-474	95
D-313C	86, 91	D-444-1	98	E-475	98
D-315	86, 87	D-445	87, 98	E-476	98
D-316	86	D-446-1	86	E-520	66
D-326	83	D-447A	95	E-526	66
D-326A	67, 83	D-449	95	E-527	78
D-329	84	D-453	100, 102	E-527A	66, 78
D-329A	67, 84	D-454	102	E-706	75
D-329-1	81	D-454A	100, 102	E-731	75
D-329-1A	78, 81	D-456-1	86	E-732	75
D-330	78	D-457	87	E-750	66, 75
D-331-1	67	D-458	87	E-751	75
D-333	87	D-462A	85, 86	E-751A	75
D-334	87	D-509	67	E-753	75
D-335	84	D-704	75	E-753A	75
D-336	87	D-705	75	E-759	75
D-343	81	D-811	86	E-867-1	98
D-344	86	D-823	91	E-867-2	100
D-345	81	D-884	86		
D-350	82	D-885	86	5E-	
D-352	66			5E-81	106
D-356	67			5E-82	106
D-357	67	E-5	104	5E-83	106, 108
D-401S	86	E-5A	104		
D-402	86	E-16-1	104	7E-	
D-403	94	E-18	104	7E-1	103
D-403A	86, 94	E-55	106, 108	7E-2	67, 103
D-404	87	E-56	106	7E-3	103, 104
D-405	92, 98	E-57	106	7E-4	103
D-405-1	98	E-58	106, 108	7E-50	103, 106
D-405A	87, 92	E-60	85, 106, 108	7E-51	103
D-406	93	E-61	106, 108	7E-52	106, 108
D-406A	86, 93	E-62	106	7E-52M	106
D-407	95	E-76	108	7E-53	106, 108
D-408	90	E-78	106, 108	7E-53M	106
D-408A	86, 90	E-111	70	7E-66	106, 108
D-409	95	E-113	70	7E-72	108
D-412	93, 94	E-127-	75	7E-73	108
D-413	86	E-150	70		

NUMERICAL INDEX

<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>	<u>Part No.</u>	<u>Page</u>
T-		T-		10T-	
T-143	86	T-1688S	78	10T-12	83
T-203	87	T-1712-1	98	10T-73	104
T-233	67	T-1734-5	98	10T-77	104
T-237	87	T-1744-1	86	10T-81	104
T-240	70, 72	T-1744-2	86		
T-241	72	T-1913	78	17T-	
T-242	72	T-1959-2	66	17T-25	109
T-243	72, 86	T-1959-14	66		
T-313-4A	66	T-1959-18	66	18T-	
T-333	98	T-3117-3	87	18T-6	104
T-452	67	T-3164	87	18T-8	104
T-455	66	T-3173	75	18T-9	104
T-469	67	T-3177	75	18T-10	104
T-583	95			18T-11	104
T-598	87			18T-12	104
T-729	66	3T-		18T-13	104
T-740	75	3T-8	66	18T-14	104
T-754	75	3T-23	104	18T-15	104
T-886	66	3T-25	3, 70	18T-17	104
T-1389-1	72				
T-1389-2	72	4T-		23-	
T-1404-1	92, 98	4T-19	70	23-2	94
T-1407-1	67	4T-27	86	25-2	72
T-1415	86, 98	4T-1266	78	25-3	104
T-1416	66, 75			25-25	81, 87
T-1441	78	5T-		25-26	93, 94
T-1447-1	100	5T-106	66, 70		
T-1454-1	66	5T-537	72	26-3	109
T-1457	67	5T-558	66	26-54	109
T-1462	95	5T-588-75	72	26-55	109
T-1466	87	5T-592	72	26-58	109
T-1470	98	5T-593-75	72	26-59	109
T-1473-3	87	5T-594	72	26-76	109
T-1474	87	5T-595	72	26-103	109
T-1481	87	5T-596	72		
T-1490	102	5T-598-2	75	PA-	
T-1490-1	66	5T-598-3	66	PA-423	91
T-1493	86	5T-598-4	66		
T-1500	85	5T-658	72		
T-1500-1	95				
T-1500-5	75	6T-			
T-1501	100	6T-1111	78, 85		
T-1502	67	6T-1111S	66		
T-1502-1	87				
T-1507	82	7T-			
T-1507S	66	7T-13	104		
T-1509	66	7T-14	104		
T-1509S	66	7T-15	75, 104		
T-1543	91	7T-15-1	67		
T-1591-4	86	7T-476-1	75, 86		
T-1591-5	86	7T-1031	86		
T-1592	86				
T-1657-2	75	8T-			
T-1662	75	8T-94	109		
T-1676	66	8T-1240A	75		
T-1686-1	66	8T 1243F	75		

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